

## Abstract Selection

**Measurement of short-term <sup>11</sup>C-thymidine activity in human head and neck tumours using positron emission tomography (PET).** van-Eijkeren, M.E., De Schryver, A., Goethals, P., Poupeye, E., Schelstraete, K., Lemahieu, I., De Potter, C. R. Department of Radiotherapy and Nuclear Medicine, University Hospital, Gent, Belgium. *Acta Oncologica* (1992), Vol. 31 (5), pp. 539–43.

Tumour uptake of <sup>11</sup>C-thymidine labelled in the methyl position was assessed after intravenous injection in 13 patients with head and neck tumours. This activity was compared to other tracers such as C150, <sup>13</sup>NH3 and C1502. In every single case a 'positive' tumour image after injection of <sup>11</sup>C-thymidine was obtained. Time-activity curves showed the initial activity to be followed by a rapid decrease over the first 10–15 min with an apparent plateau thereafter. A similar level of uptake was found in normal salivary gland regions and myocardium, while higher activities were noted in liver and kidney parenchyma. It is suggested that both blood flow and cellular metabolism can influence <sup>11</sup>C-thymidine imaging in this class of human tumours. Author.

**Protective effect of different doses of terfenadine on the conjunctival provocation test.** Ciprandi, G., Buscaglia, S., Iudice, A., Canonica, G. W. Department of Internal Medicine, University of Genoa, Italy. *Allergy* (1992) August, Vol. 47 (4 Pt 1), pp. 309–12.

The protective effect of terfenadine on inflammatory processes following the early phase of conjunctival provocation tests by specific allergen was assessed in 24 patients suffering from seasonal allergic rhinoconjunctivitis, in a single-blind, randomized, placebo-controlled, parallel-group study. Patients were randomly assigned to four treatment groups, each being given terfenadine 60, 120, 180 mg daily, or placebo, respectively, for seven days, out of the pollen season. Clinical severity (burning, itching, lacrimation and hyperemia), and number of inflammatory cells obtained by conjunctival scraping (neutrophils, eosinophils, lymphocytes, and monocytes) were evaluated before and after treatment. Pre-treatment with terfenadine resulted in a significantly higher allergen threshold dose than placebo ( $P$  less than 0.01), regardless of drug dose. Patients given terfenadine experienced a significant reduction ( $P$  less than 0.03) in conjunctival symptom severity, as compared with placebo, following conjunctival challenge. Accordingly, the number of inflammatory cells in terfenadine-treated patients was significantly lower ( $P$  less than 0.01) than in the placebo-treated after the conjunctival provocation test. The results of this study suggest that terfenadine has a significant protective effect on the early-phase cellular and clinical events of conjunctival reaction induced by allergen challenge in atopic patients. Author.

**A double-blind comparison of nasal budesonide and oral astemizole for the treatment of perennial rhinitis.** Bunnag, C., Jareoncharsri, P., Wong, E. C. Department of Otolaryngology, Siriraj Hospital, Bangkok, Thailand. *Allergy* (1992) August, Vol. 47 (4 Pt 1), pp. 313–7.

Sixty-nine outpatients with symptomatic perennial rhinitis were recruited to this double-blind, parallel-group study to compare budesonide nasal spray with oral astemizole. Following a one-week run-in on placebo, 67 patients achieved a mean daily total symptom score of at least 4 (scoring for each symptom was 0 = none, 1 = mild, 2 = moderate, 3 = severe), and were randomized to study treatments –33 to budesonide, 100 mg in each nostril morning and evening, and 34 to astemizole, one 10 mg tablet each morning, for a period of four weeks. No antihistamine preparations other than eye drops and no corticosteroids were permitted during the active treatment period. Patients recorded symptoms of blocked nose, runny nose, sneezing, itchy nose, sore eyes or runny eyes in diary cards each evening before retiring. Diary card data showed that there was significantly greater improvement in blocked nose, runny nose and runny eyes during the first two weeks of budesonide treatment than

during the same period on astemizole. A similar, although non-significant, trend was observed for sneezing and itchy nose, but there was no apparent difference in the reporting of sore eyes. After four weeks, blocked nose and runny nose remained significantly less troublesome in the budesonide group. Both treatments were well tolerated and no major adverse effects were reported. Patient ratings for treatment efficacy were significantly higher for budesonide than astemizole at both two weeks and four weeks. Author.

**Local nasal immunotherapy in allergic rhinitis to Parietaria. A double-blind controlled study.** Andri, L., Senna, G. E., Betteli, C., Givanni, S., Andri, G., Falagiani, P., Lugo, G. Department of Clinical Allergy, Municipal Hospital, Verona, Italy. *Allergy* (1992) August, Vol. 47 (4 Pt 1), pp. 318–23.

Preseasonal local nasal immunotherapy (LNIT) by means of an extract in macronized powder form has been studied in allergic rhinitis to parietaria. Twenty-four Parietaria-sensitive patients have been studied for 18 weeks in a double-blind controlled trial. Subjects were selected on the basis of a positive skin test, RAST and intranasal challenge to Parietaria antigen. Three eight-patient groups were randomly planned: the first group was given native Parietaria product, the second modified Parietaria product, and the third placebo. During the pollen season no difference was observed in mean weekly symptom score between the three groups, while the mean weekly medication score was significantly lower in the treated groups than the control group. Only the treated groups showed a significant increase in specific nasal threshold to Parietaria after treatment. Adverse reactions to LNIT, limited to the upper respiratory tract, occurred rarely and did not interfere with the dose schedule. This study indicates that LNIT in powder form may be a suitable alternative to the traditional subcutaneous immunotherapy in terms of clinical efficacy and safety. Author.

**A case-control study of cancer of the nose and paranasal sinuses and occupational exposures.** Comba, P., Battista, G., Belli, S., de Capua, B., Merler, E., Orsi, D., Rodella, S., Vindigni, C., Axelson, O. Istituto Superiore di Sanita, Rome, Italy. *American Journal of Industrial Medicine* (1992), Vol. 22 (4), pp. 511–20.

The association between nasal cancer and various occupations was investigated in a case-control study in the provinces of Verona and Vicenza (northeastern Italy) and Siena (central Italy). Cases of malignant epithelial neoplasm of the nasal cavities and paranasal sinuses diagnosed in the years 1982–1987 in the hospitals of Verona, Legnago, Bussolengo, Vicenza, and Siena comprised the study. Controls were patients admitted to the same hospitals as the cases, with any diagnosis except chronic rhino-sinus disease and nasal bleeding. Age, gender, residency, and date of admission were taken into account by matching. Cases and controls, or their next of kin, were interviewed or required to fill in a mailed questionnaire; the overall response rate was 70 per cent. Altogether, 78 cases and 254 controls provided information on occupational history. Significantly increased risks were associated (in males) with work in the wood industry (odds ratio (O.R.): 5.8; 90 per cent confidence interval (CI): (2.2–16) and in the leather industry (6.8; 1.9–25). Textile workers, furnacemen, construction workers, and workers with possible exposure to organic dusts showed increased risks even if statistical significance was not reached. Author.

**Study of the etiology of deafness in an institutionalized population in Columbia.** Tamayo, M. L., Bernal, J. E., Tamayo, G. E., Frias, J. L. Unidad de Genetica Clinica, Facultad de Medicina, Pontificia Universidad Javeriana, Bogota, Colombia. *American Journal of Medical Genetics* (1992) November 1, Vol. 44 (4), pp. 405–8.

To identify causative factors we screened 1,715 deaf individuals from 16 schools for the deaf in Colombia. We found evidence of

environmental causation in 579 (33.8 per cent) cases, genetic in 608 (35.4 per cent), and in 528 (30.8 per cent) we were unable to identify the etiology. The degree of hearing loss was severe to profound in 1,238 (72.2 per cent), although in 987 (57.5 per cent) of the deaf population studied the hearing impairment was not noticed until two to five years of age. The frequent association of deafness with other anomalies underscores the importance of a careful clinical and ophthalmologic evaluation in individuals with hearing loss. Our observations also emphasize the need for programs directed towards the prevention of hearing loss, including primary prevention as well as early diagnosis, investigation of possible genetic causes, and rehabilitation of deaf individuals. Author.

**Biochemical characterization of a pedigree with mitochondrially inherited deafness.** Prezant, R. T., Shohat, M., Jaber, L., Pressman, S., Fischel-Ghodsian, N. Ahmanson Department of Pediatrics, Steven Spielberg Pediatric Research Centre, Cedars-Sinai Medical Centre, Los Angeles, California. *American Journal of Medical Genetics* (1992) November 1, Vol. 44 (4), pp. 465–72.

A large kindred with a predicted two-locus inheritance of sensorineural deafness, caused by the combination of a mitochondrial and an autosomal recessive mutation, was examined at the biochemical level. Because of the mitochondrial inheritance of this disease, we looked for defects in the oxidative phosphorylation Complexes I, III, IV, and V, the four enzymes that include all of the 13 mitochondrially encoded polypeptides. Biosynthetic labelling of lymphoblastoid cells from deaf patients, unaffected siblings, and an unrelated control showed no difference in size, abundance, rate of synthesis, or chloramphenicol-sensitivity of the mitochondrially encoded subunits. Since overall mitochondrial protein synthesis appears normal, these results suggest that the mitochondrial mutation is unlikely to be in a tRNA or rRNA gene. No change in enzymatic levels was seen in lymphoblastoid mitochondria of the deaf patients, compared to unaffected sibs and controls, for Complexes I and IV. Both affected and unaffected family members showed an increase in Complex III activity compared to controls, which may reflect the mitochondrial DNA shared by maternal relatives, or be due to other genetic differences. Complex V activity was increased in deaf individuals compared to their unaffected sibs. Since the family members share the presumptive mitochondrial mutation, differences between deaf and unaffected individuals likely reflect the nuclear background and suggest that the autosomal recessive mutation may be related to the increase in Complex V activity. These biochemical studies provide a guide for sequence analysis of the patients' mitochondrial DNA and for linkage studies in this kindred. Author.

**Phenotypic evidence for a common pathogenesis in X-linked deafness pedigrees and in Xq13-q21 deletion related deafness.**

Reardon, W., Roberts, S., Phelps, P. D., Thomas, N. S., Beck, L., Issac, R., Hughes, H. E. Institute of Medical Genetics, University Hospital of Wales, Heath Park, Cardiff, UK. *American Journal of Medical Genetics* (1992) November 1, Vol. 44 (4), pp. 513–7.

A structural cochlear abnormality has been observed by high resolution CT scanning in some families where X-linked deafness is segregating. We now present evidence that the same abnormality is present in a deaf patient who has a deletion within Xq21. This observation provides phenotypic evidence that the genotypic basis of deafness is the same in both patient groups. It is also likely that the perilymphatic fluid 'gusher' abnormality may be common to both. Author.

**Occult fever in surgical intensive care unit patients is seldom caused by sinusitis.** Borman, K. R., Brown, P. M., Mezera, K. K., Jhaveri, H. Department of Otorhinolaryngology, University of Texas Southwestern Medical School, Dallas 75235-9031. *American Journal of Surgery* (1992) November, Vol. 164 (5), pp. 412–5; discussion 415–6.

Febrile intensive care unit (ICU) patients were evaluated prospectively for sinusitis. Of 598 admissions, 26 patients with transnasal cannulas, ICU stays over 48 hours, and occult fevers were identified. These 26 underwent physical examinations and sinus computed tomographic (CT) scans. Maxillary cisterns and cultures were done in patients with CT abnormalities. Patients with positive scans had nasal tubes removed and received decongestants. Scans were abnormal in 19 (73 per cent). All patients with major CT changes had positive maxillary taps. Most infections were polymicrobial; enteric bacilli were common. Fever resolved with nonoperative care in 18 (95 per cent) patients; in only one patient was fever primarily

from sinusitis. Sinus CT scans are often abnormal in ICU patients with occult fevers and transnasal cannulas. Pneumatic otoscopy can serve as a screening tool. Most patients respond to nonoperative management. Remote infections are often present. Although radiographic nosocomial ICU sinusitis is common, it is seldom the sole source of fever or the proximate cause of significant morbidity. Author.

**Physiologic control. Anatomy and physiology of the airway circulation.** Widdicombe, J. Department of Physiology, St. George's Hospital Medical School, London, United Kingdom. *American Review of Respiratory Diseases* (1992) November, Vol. 146 (5 Pt 2), pp. S3–7.

Both for the nose and the lower airways there is an extensive subepithelial capillary network. That for the nose is fenestrated, and this is true for the tracheobronchial tree of rats, guinea pigs and hamsters, and for that of human asthmatics. However, healthy humans, dogs and sheep have capillaries without fenestrations except for those close to neuroepithelial bodies and submucosal glands. Deeper in the mucosa there is a capacitance system of vessels, conspicuous in the nose but present also in the lower airways of rabbits and sheep and, to a lesser extent, in those of dogs and humans. Both for the nose and the lower airways, parasympathetic nerves are vasodilator, sympathetic nerves are vasoconstrictor, and sensory nerves are able to release dilator neuropeptides. Most inflammatory and immunologic mediators are vasodilator. A conspicuous difference between the nasal and lower airway vasculatures is the presence of arteriovenous anastomoses only in the former. Countercurrent mechanisms also exist in the nose to increase its efficiency in air conditioning, but they have not been established for the trachea. The pulmonary vasculature could be part of such a system for the bronchi. Distension of the airway vasculature thickens the mucosa, probably both by vascular distension and by edema formation. The latter can lead to exudation into the airway lumen. These processes have not been well quantitated, and the balance sheet of capillary and capacitance vessel volumes, interstitial liquid volume, and exudate volume needs to be worked out in physiologic and pathologic conditions. Author.

**Effects of surgical correction of nasal obstruction in the treatment of obstructive sleep apnoea.** Series, F., St. Pierre, S., Carrier, G. Unite de recherche, Hopital Laval, Universite Laval, Quebec, Canada. *American Review of Respiratory Diseases* (1992) November, Vol. 146 (5 Pt 1), pp. 1261–5.

Negative upper airway pressure is thought to play a key role in the pathophysiology of obstructive sleep apnoea. Because nasal resistance contributes to the increase of the transpharyngeal pressure gradient, we evaluated the effects of nasal surgery on sleep-related breathing abnormalities in 20 adults with obstructive sleep apnoea. Polysomnographic studies were done before (baseline), and 2 to 3 mo after surgery (septoplasty, turbinectomy, and/or polypectomy). Nasal resistances were measured at these visits in 14 patients. Cephalometric measurements were obtained before surgery. Cephalometric abnormalities consisted in an increase in the distance from the mandibular plane to the hyoid bone (MP-H), a decrease in the space between the base of the tongue and the posterior soft tissues (PAS), a retroposition of the mandible, and an increase in the length of the soft palate. Body weight did not change between the two studies. Nasal resistance decreased significantly after nasal surgery. The composition of the total sleep time spent in the rapid eye movement stage increased from  $11.5 \pm 1.3$  per cent (mean  $\pm$  SEM) to  $14 \pm 1.2$  per cent after surgery. For the group as the whole, there was no difference between baseline and postsurgical values in the frequency of respiratory disturbances ( $39.8 \pm 6.1, 36.8 \pm 5.9$  n/h), the total apnoea time ( $17.8 \pm 4.2, 15.4 \pm 2.8$ ), the distribution of the apnoea time within the different apnoea types (obstructive and nonobstructive), and the severity of the nocturnal desaturations. Interestingly, apnoea and apnoea plus hypopnea indices returned to normal values ( $<5$  and  $10$ , respectively) in four subjects with normal posterior soft tissues and mandibular plane to the hyoid bone distances. Author.

**Does the laryngeal mask airway compromise cricoid pressure?** Strang, T.I. Department of Anaesthetics, Royal Albert Edward Infirmary, Wigan. *Anaesthesia* (1992) October, Vol. 47 (10), pp. 829–31.

The laryngeal mask airway was inserted in 10 cadavers. At post-mortem the chest was opened and an infusion set primed with a

dilute barium solution was inserted into the oesophagus and ligated in place. A cricoid force of 43 N was then applied and the infusion set was positioned so that when the clamp was opened it generated a pressure of 7.8 kPa within the oesophagus. The cricoid pressure was able to stop the flow of fluid into the oesophagus. This demonstrates that cricoid pressure is effective in preventing reflux at intragastric pressures which are encountered clinically and the presence of the laryngeal mask airway does not compromise this. Author.

**Laryngospasm during transtracheal high frequency jet ventilation.** Schumacher, P., Stotz, G., Schneider, M., Urwyler, A. Department of Anaesthesia, University of Basel/Kantonsspital, Switzerland. *Anaesthesia* (1992) October, Vol. 47 (10), pp. 855–6. A 74-year-old woman developed severe cardiovascular depression during percutaneous transtracheal high frequency jet ventilation for laser surgery of the epiglottis. This was found to be caused by acute airway obstruction secondary to severe laryngospasm. We recommend profound neuromuscular blockade during percutaneous transtracheal jet ventilation, in order to prevent this complication. Author.

**Prevention of hyperbaric-associated middle ear barotrauma.** Carlson, S., Jones, J., Brown, M., Hess, C. Emergency Medicine Residency Program, Butterworth Hospital, Grand Rapids. *Annals of Emergency Medicine* (1992) December, Vol. 21 (12), pp. 1468–71. **STUDY OBJECTIVE:** To determine the efficacy of topical nasal decongestant in the prevention of middle ear barotrauma in patients undergoing hyperbaric oxygen therapy. **DESIGN:** Prospective, parallel, double-blind, randomized trial. **SETTING:** University-affiliated community hospital emergency department with hyperbaric oxygen facilities. **PARTICIPANTS:** Sixty patients undergoing hyperbaric oxygen therapy 30 subjects in each treatment arm. **INTERVENTIONS:** After randomization, consenting patients were given two sprays of oxymetazoline hydrochloride or sterile water, 15 mins before hyperbaric oxygen therapy. Collected data included patient demographics, ear examinations before and after hyperbaric oxygen treatment, and subjective ear complaints. The otoscopic appearance of the tympanic membrane was graded according to the amount of hemorrhage in the eardrum, with Teed scores ranging from 0 (symptoms only) to 5 (gross hemorrhage and rupture). **RESULTS:** The treatment groups were similar with regard to age, sex, and medical history. Ear discomfort during hyperbaric oxygen therapy was present in 63 per cent (19 of 30) of those receiving oxymetazoline versus 67 per cent (20 of 30) of the control group ( $P = 0.99$ ). Likewise, both groups had similar Teed scores after hyperbaric oxygen therapy ( $P = 0.88$ ). No adverse effects were noted. **CONCLUSION:** The results of this pilot study suggest that topical decongestants may not be effective in preventing middle ear barotrauma during hyperbaric oxygen therapy. Author.

**The chondromucosal sleeve for the secondary correction of the unilateral cleft lip nasal deformity.** Kirschbaum, J. D., Kirschbaum, C. A. Department of Plastic and Reconstructive Surgery, Militar Hospital, Lima, Peru. *Annals of Plastic Surgery* (1992) November, Vol. 29 (5), pp. 402–7.

We present a new procedure for the secondary correction of the cleft lower lateral cartilage in the unilateral cleft lip nose deformity. A chondromucosal sleeve based entirely on mucosa is combined with an open rhinoplasty to facilitate a medial to lateral rotation of the cleft lower lateral cartilage. In 52 patients, we have found that this technique improved the results of the deformity and is more successful than lateral to medial rotation procedures alone. The chondromucosal sleeve adds to the medial to lateral rotation techniques the ability to obtain a controllable and reproducible result. Author.

**Benign mesodermal tumours producing nasal deformity.** Placik, O. J., Lim, R., Lewis, V. L. Jr., Griffith, B. H. Division of Plastic, Reconstructive, and Maxillofacial Surgery, Northwestern University Medical School, Chicago, IL. *Annals of Plastic Surgery* (1992) November, Vol. 29 (5), pp. 446–9.

Tumours of neurogenic (ectodermal) origin are well-described causes of nasal deformity. We present a patient with a benign mesodermal tumour (unclassified spindle cell) producing nasal deformity. A retrospective review of the two senior authors' records provided an additional three patients with nonvascular benign mesodermal nasal masses (fibroma and leiomyoma). Benign mesodermal masses can occur in the midline of the nose and need to be differentiated from dermoids and gliomas. Misdagnosis is the rule. Excisional

biopsy is required for definitive diagnosis. In addition, excisional biopsy is curative and can help to minimize the subsequent nasal deformity if performed early in the disease process. Immunohistochemical and electron microscopy may be required for comprehensive diagnosis and treatment. Author.

**Purulent otitis media in adults.** Schwartz, L. E., Brown, R. B. Department of Medicine, Baystate Medical Centre, Springfield, MA 01199. *Archives of Internal Medicine* (1992) November, Vol. 152 (11), pp. 2301–4.

While the bacterial origin of otitis media has been studied extensively in children, there are few data regarding adults with this disease. We undertook this study to identify the incidence, prevalence, and bacteriologic origin of purulent otitis media in adults. This was accomplished through a review of the English-language literature on adult otitis media and a retrospective review of adult patients with this disease who were hospitalized at our institution. Results of literature review indicate that *Streptococcus pneumoniae* and *Haemophilus influenzae* are the most common causes of otitis media in ambulatory adults, but this illness is uncommon, with an incidence of only 0.25 per cent. Hospitalized patients in whom this diagnosis was established suffered a variety of serious suppurative complications such as mastoiditis, meningitis, or brain abscess. Otolgia and fever were the most common symptoms noted in this patient population. Further studies of adult otitis media need to be performed to determine bacteriologic, symptomatic, and high-risk patient groups. Author.

**Nasal T-cell lymphoma associated with hemophagocytic syndrome. Immunohistochemical and genotypic studies.** Chubachi, A., Imai, H., Nishimura, S., Saitoh, M., Miura, A. B. Third Department of Internal Medicine, Akita University School of Medicine, Japan. *Archives of Pathology and Laboratory Medicine* (1992) November, Vol. 116 (11), pp. 1209–12.

A 53-year-old man with nasal T-cell lymphoma exhibited hemophagocytic syndrome as a terminal event. Immunohistochemical studies revealed that neoplastic cells were derived from T cells. Genotypic analysis of DNA samples that were obtained from the frozen tissue specimens demonstrated clonal rearrangements of the T-cell receptor beta-chain genes. No rearrangement was observed in the immunoglobulin heavy-chain gene. To our knowledge, only three cases of nasal T-cell lymphoma with hemophagocytic syndrome have been reported before the present case. All of these cases occurred in Oriental patients. The present report suggests the beneficial effect of high-dose glucocorticoid therapy on the prolongation of survival compared with that of the other three cases. Author.

**Effect of hearing aids on speech perception in noisy situations.** Verschuure, J., van Benthem, P. P. Audiological Centre, Department of Otorhinolaryngology, Erasmus University Rotterdam, The Netherlands. *Audiology* (1992), Vol. 31 (4), pp. 205–21.

Hearing-impaired people often complain about poor speech intelligibility when they are in noisy surroundings. Several authors have published data suggesting that hearing aids add distortion to the signal and thus make speech less intelligible. Given the tendency of people to speak louder in competing noise, it means that some patients might understand better in such circumstances without an aid than with an aid. The present study investigated the effect of modern commercial hearing aids on the ability of patients to understand speech monaurally in noisy circumstances. The results in general showed speech to be equally understandable with and without an aid if the effects of presentation level (amplification) are excluded. The results, however, varied considerably between patients. Statistical analysis showed that the variance could be explained primarily by the degree of high-frequency loss and the slope of the audiogram. Patients with steep sloping audiograms understand better and patients with a conductive hearing loss component understand less in noisy circumstances with a hearing aid. Speech intelligibility in noisy situations did not correlate at all with the hearing loss averaged over the mid-frequencies (500, 1,000 and 2,000 Hz) but it did correlate with the high-frequency hearing loss (2,000 and 4,000 Hz) and the slope of the audiogram, indicating the importance of high-frequency emphasis in hearing aids. Author.

**Natural vowel perception by patients with the ineraid cochlear implant.** Tyler, R. S., Preece, J. P., Lansing, C. R., Gantz, B. J. Department of Otolaryngology, University of Iowa, Iowa City. *Audiology* (1992), Vol. 31 (4), pp. 228–39.



Vowel recognition was tested in 10 patients using the Ineraid cochlear implant. The vowels were produced by a male speaker in the context 'heed, hid, head, had, hawed, hood, who'd, hud' and 'heard'. Performance varied from 34 to 93 per cent correct. A descriptive feature system for the vowels was determined from an acoustic analysis. An information transfer analysis of these features suggested that information about the first formant frequency, vowel duration and fundamental frequency was transmitted. Information about the second and third formant frequency was transmitted less well. A sequential information transmission analysis suggested that the features of the first formant and duration accounted for nearly 80 per cent of the information transmitted. The fundamental frequency and second formant frequency information accounted for an additional 8 per cent. Information provided by the third formant frequency was largely redundant. Author.

**Retrospective analysis of nasopharyngeal carcinoma treated during 1976–1985: late complications following megavoltage irradiation.** Lee, A. W., Law, S. C. Ng, S. H., Chan, D. K., Poon, Y. F., Foo, W., Tung, S. Y., Cheung, F. K., Ho, J. H. Institute of Radiology and Oncology, Queen Elizabeth Hospital, Kowloon, Hong Kong. *British Journal of Radiology* (1992) October, Vol. 65 (778) pp. 918–28.

A retrospective analysis was undertaken of the late complications observed in 4,527 patients with nasopharyngeal carcinoma treated by megavoltage radiotherapy during the years 1976–1985. Unconventional fractionation schedules were used because of serious resource limitations. The median equivalent doses were 65 Gy to the nasopharyngeal region and 53 Gy to the cervical region. Seven hundred and seven patients had reirradiation for local recurrences and 250 for regional relapses. The 10-year actuarial cancer-specific survival was 47 per cent, and the corresponding all-complication-free and neurological-complication-free rates were 40 per cent and 72 per cent, respectively. Altogether, 1,395 (31 per cent) patients developed one or more late irradiation sequelae. The majority were mild soft-tissue damages, but 322 (7 per cent) had significant functional disturbances, from which 62 (1 per cent) died. Neurological damage that occurred in 450 (10 per cent) patients constituted the major morbidity and accounted for all but three of the treatment mortalities. The cumulative incidence of the various complications is summarized, and the data recorded in the literature reviewed in order to give a proper perspective of the problem. Patients treated during 1981–1985 had a significantly higher actuarial encephalomyelopathy-free rate than those treated during 1976–1980, but the incidence-free rates for the other neurological complications remained unimproved, suggesting that the improvement could be mainly attributed to additional shielding for the brainstem rather than the reduction of dose from 3.8–4.2 Gy to 2.5 Gy per fraction. Author.

**Long-term treatment results of postoperative radiation therapy for advanced stage oropharyngeal carcinoma.** Zelefsky, M. J., Harrison, L. B., Armstrong, J. G. Department of Radiation Oncology, Memorial Sloan-Kettering Cancer Centre, New York, New York 10021. *Cancer* (1991) November 15, Vol. 70 (10), pp. 2388–95.

**BACKGROUND:** The authors report the long-term treatment results for advanced stage base of tongue (BOT) and tonsillar fossa (TF) carcinomas treated with surgery and postoperative radiation therapy (RT) at Memorial Sloan-Kettering Cancer Centre. **METHODS.** Between 1973 and 1986, 51 patients with squamous cell carcinoma of the BOT ( $n = 31$  patients) and TF ( $n = 20$  patients) were treated with surgery plus RT. Indication(s) for TR included: advanced disease (Stage T3/T4, 34 patients (66 per cent)); close or positive margins (33 patients, 64 per cent) and multiple positive neck nodes (43 patients, 84 per cent). **RESULTS.** The seven-year actuarial local control rates for BOT and TF lesions were 81 per cent and 83 per cent, respectively. Local control was achieved in 17 of 18 (94 per cent) patients with T3 lesions, and 12 of 16 (75 per cent) patients with T4 lesions. Among patients with positive or close margins who received postoperative doses of 60 Gy or more, the long-term control rates was 93 per cent. The presence of a treatment interruption had a negative effect on the local control rates. The actuarial control among patients who required a treatment break was 64 per cent; for those not requiring interruption of their treatment, the actuarial control was 93 per cent ( $P = 0.05$ ). At seven years, the overall survival for all patients was 52 per cent, and the disease-free survival was 64 per cent. The actuarial incidence of neck failure was 21 per cent and 18 per cent for BOT and TF, respectively. The like-

hood of having distant metastasis at seven years for all patients was 30 per cent. The actuarial incidence of having a second malignancy was 35 per cent for patients with BOT disease. Second malignancy was not observed among patients with TF lesions. **CONCLUSIONS.** The authors conclude that surgery and postoperative RT can provide excellent long-term, disease-control rates for patients with advanced BOT and TF tumours. However, current strategies for BOT lesions have been directed at tongue preservation without surgery. Author.

**Auditory brain stem responses in patients after radiation therapy for nasopharyngeal carcinoma.** Grau, C., Moller, K., Overgaard, M., Overgaard, J., Elbrond, O. Department of Otorhinolaryngology and Audiology, Aarhus University Hospital, Denmark. *Cancer* (1991) November 15, Vol. 70 (10), pp. 2396–401.

**BACKGROUND:** The study evaluated the incidence and severity of brain stem myelopathy occurring after radiation exposure in a cohort of patients who received external radiation exposure for nasopharyngeal carcinoma (NPC). **METHODS.** Brain stem function was investigated by auditory brain stem responses (ABR). **RESULTS.** Four of 21 patients who could be examined had aberrations in ABR. Three patients showed highly abnormal ABR, with no distinctive patterns or peaks. Two of these patients also showed clinical symptoms of brain stem dysfunction, including multiple palsies in cranial and peripheral nerves, whereas the third patient had no clinical signs of brain stem disorders. The fourth patient had minor conduction delays in ABR. The remaining group of 17 patients who could be examined had ABR latency and transmission times similar to those of the control group. None of these patients had neurologic symptoms. Dose-response analysis showed that patients who received radiation doses of 59 Gy or less to the brain stem had normal ABR, whereas four of six patients who received a dose of 68 Gy had manifest or subclinical brain stem dysfunction. **CONCLUSIONS.** The results emphasize the importance of protecting the brain stem from high-dose radiation when possible. The results also demonstrate the usefulness of ABR as a supplement to the clinical examination of patients with possible myelopathy occurring after radiation exposure. Author.

**Lipid-associated sialic acid, squamous cell carcinoma antigen, carcinoembryonic antigen, and lactic dehydrogenase levels as tumour markers in squamous cell carcinoma of the head and neck.** Dreyfuss, A. I., Clark, J. R., Andersen, J. W. Division of Medicine, Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts, 02115. *Cancer* (1991) November 15, Vol. 70 (10), pp. 2499–503.

**BACKGROUND:** Circulating tumour markers are valuable adjuncts in the management of several malignant lesions, including germ cell tumours and adenocarcinomas of the breast, colon, prostate, and ovary. However (to the author's knowledge), currently, no serologic markers have been shown to have prognostic value for patients with squamous cell carcinomas of the head and neck (SCCHN). **METHODS.** Novel and existing markers were evaluated prospectively in patients with SCCHN. The levels of lipid-associated sialic acids (LASA), squamous cell carcinoma circulating antigen (SCC-Ag), carcinoembryonic antigen (CEA), and lactic dehydrogenase (LDH) were evaluated in 52 patients: 42 with active measurable SCCHN and 10 with no clinical evidence of active disease after treatment (NED). **RESULTS.** In patients with active disease, LASA, SCC-Ag, CEA, and LDH were elevated in 71 per cent, 33 per cent, 27 per cent and 18 per cent, respectively, and in seven patients with distant metastasis (M1) in 100 per cent, 86 per cent, 57 per cent and 33 per cent, respectively. None of the markers were elevated in the NED group. The incidence and magnitude of LASA and SCC-Ag elevations correlated with the extent of disease (active disease versus NED, Stage III versus IV, T0-3 versus T4 primary lesions, M0 versus M1). LDH and CEA elevations correlated primarily with the presence of distant metastases. **CONCLUSIONS.** LASA appears to be a promising sensitive marker of SCCHN, followed in decreasing order of sensitivity by SCC-Ag, CEA, and LDH. Additional study to evaluate the specificity of LASA and its correlation with tumour response to therapy is warranted. Author.

**Potential impact on tumour control and organ preservation with cisplatin and 5-fluorouracil for patients with advanced tumours of the paranasal sinuses and nasal fossa. A prospective pilot study.** Bjork-Eriksson, T., Mercke, C., Petruson, B., Ekholm, S.

Department of Oncology, Sahlgren's Hospital, Gothenburg, Sweden. *Cancer* (1992) December 1, Vol. 70 (11), pp. 2615–20.

**METHODS.** Twelve patients with advanced epithelial nonadenocarcinoma of the paranasal sinuses and nasal fossa were treated with three cycles of cisplatin (100 mg/m<sup>2</sup>, day 1) and 5-fluorouracil, (1000 mg/m<sup>2</sup>/24 h on days 1–5 by continuous infusion), followed by preoperative external radiation therapy of 48 Gy and limited surgery, clearing the paranasal sinuses and nasal fossa. **RESULTS.** After chemotherapy, 11 of 12 patients were free of the previous symptoms of disease. Clinical response rates were different, however, with an overall response rate of approximately 70 per cent with no complete responses. Histopathologic analysis of resected specimens showed no vital tumour in eight patients, minimal microscopic disease in three patients, and infiltrating tumour in one patient. Local control was achieved in 11 of 12 patients. Ten patients are alive with no evidence of disease (mean follow-up, 27 months). Surgical mutilation was avoided, with no functional or cosmetic loss. **CONCLUSIONS.** The results of this small pilot study seem to indicate a high chemosensitivity of carcinomas of the paranasal sinuses and nasal fossa, which, in this study, has meant significant relief of symptoms and an unusually high rate of local control (90 per cent) without mutilation. Author.

**Ring chromosome 22 and neurofibromatosis.** Tommerup, N., Warburg, M., Gieselmann, V., Hansen, B. R., Koch, J., Petersen, G. B. Danish Centre for Human Genome Research, Glostrup. *Clinical Genetics* (1992) October, Vol. 42 (4), pp. 171–7.

Variable constitutional mosaicism, mos45, XY, -22/46, XY, -22, +mar/46, XY, -22, +r(22)/47, XY, -22, +r(22)+mar/47, XY, -22, +r(22)\*2, was found in PHA-stimulated peripheral blood, in a lymphoblastoid cell line and in cultured skin fibroblasts from a mentally retarded patient with neurofibromatosis. Both the ring chromosome and the small extra marker chromosome stained positively by in situ hybridization with a chromosome 14/22-specific aliphoid repeat probe. DNA dosage analysis showed constitutional loss of one copy of the arylsulfatase A gene (ARSA), consistent with its terminal location on 22q. There was no evidence of constitutional loss of D22S1 or D22S28 which flank the neurofibromatosis type 2 (NF2) locus. Analysis of two DNA samples from a skin neurofibroma indicated retainment of two copies of D22S1, whereas the results were ambiguous with respect to tumour-specific loss of one copy of D22S28. It is suggested that the development of neurofibromatosis of unclear type in two r(22) carriers might be associated with somatic mutation of the NF2 locus due to instability of the ring chromosome(s), and in analogy, that somatic mutation of either NF1 or NF2 may account for some cases of neurofibromatosis which do not meet the criteria of either NF1 or NF2. The occurrence of seminoma in the proband may be fortuitous, but could also be due to the presence of a seminoma-associated locus on chromosome 22. Author.

**Fracture of the laryngeal cartilage. An incidental finding on bone scintigraphy.** Steuart, R. D., Morrison, R. T. Department of Radiology, University Hospital Shagnessy Site, Vancouver, British Columbia, Canada. *Clinical Nuclear Medicine* (1992) October, Vol. 17 (10), pp. 815–7.

A patient complaining of headaches and bone pain at multiple sites had Tc-99m MDP scintigraphy performed for possible bone trauma after a motor vehicle accident. Bone imaging revealed a small focal increase in tracer uptake in the area of the laryngeal cartilage. There was some reluctance to place a label on this abnormality because the findings were so unusual. The initial diagnosis was a probable fracture of the laryngeal cartilage. Computed tomography of the neck also demonstrated a fracture but correctly localized it to the thyroid cartilage. Author.

**Multiple swallows and piecemeal deglutition; observations from normal adults and patients with head and neck cancer.** Dziadzioła, J., Hamlet, S., Michou, G., Jones, L. Department of Otolaryngology, Harper Hospital, Wayne State University, Detroit, Michigan 48201. *Dysphagia* (1992), Vol. 7 (1), pp. 8–11.

The incidence of multiple swallows for liquid and paste, and the time delay between multiple swallows, was determined from videofluoroscopic records of modified barium swallow tests. In a comparison of liquid and paste, the overall incidence of multiple swallows did not differ, for either patients with head and neck cancer or normal controls. However, for liquid swallows the incidence in patients with cancer was abnormally high, predominantly in patients with pharyngeal cancer. Author.

**Impact of the diagnostic procedure on outcome measures of swallowing rehabilitation in head and neck cancer patients.** Logemann, J. A., Roa-Pauloski, B., Rademaker, A., Cook, B., Graner, D., Milianti, F., Beery, Q., Stein, D., Bowman, J., Lazarus, C., et al. Northwestern University, Evanston, IL 60208. *Dysphagia* (1992), Vol. 7 (4), pp. 179–86.

This study was designed to determine whether swallow rehabilitation outcomes were affected by the type of evaluation procedure utilized by the clinician. The two evaluation techniques compared were the bedside examination and videofluoroscopy (the modified barium swallow). Ten institutions participated in this study, enrolling a total of 103 partial laryngectomized patients, 21 in the bedside arm and 82 in the videofluoroscopy arm. Data on recovery of oral intake were collected weekly. All patients received an X-ray study of swallow at three months after the operation. Mean time to oral intake of food was significantly lower in patients assessed with bedside examination. Overall swallow measures of transit times and swallow efficiencies after three months revealed significantly better function in the videofluoroscopy group. Results are discussed in terms of the visibility of swallow physiology with the two assessment techniques, the accuracy of therapy planning with the bedside examination versus videofluoroscopy and the ability of head and neck cancer patients to tolerate some aspiration without developing aspiration pneumonia. Author.

**On the evidence of auditory evoked magnetic fields as an objective measure of tinnitus.** Colding-Jorgensen, E., Lauritzen, M., Johnsen, N. J., Mikkelsen, K. B., Saermark, K. Laboratory of Clinical Neurophysiology, Rigshospitalet, University Hospital of Copenhagen, Denmark. *Electroencephalography and Clinical Neurophysiology* (1992) November, Vol. 83 (5), pp. 322–7.

The purpose of the present study was to determine the utility of auditory evoked magnetic fields as an objective measure of tinnitus. The auditory evoked magnetic fields of 14 patients with tinnitus and of 14 sex- and age-matched controls were measured by means of a 7-channel BTI neuromagnetometer. Stimuli were 1 kHz tone-bursts presented randomly. Tinnitus patients and controls were similar with respect to latencies and amplitudes of the N100m and P200m, and with respect to the locations and moments of the equivalent current dipoles. The present study could not support the notion that specific abnormalities of the auditory evoked magnetic fields are characteristic of patients with tinnitus. Author.

**Linkage studies of Usher syndrome type I: exclusion results from the Usher syndrome consortium.** Keats, B. J., Todorov, A. A., Atwood, L. D., Pelias, M. Z., Hejtmanck, J. F., Kimberling, W. J., Leppert, M., Lewis, R. A., Smith, R. J. Department of Biometry and Genetics, Louisiana State University Medical Centre, New Orleans 70112. *Genomics* (1992) November, Vol. 14 (3), pp. 707–14.

Usher Syndrome Type I is an autosomal recessive disease characterized by profound congenital hearing impairment and vestibular dysfunction followed by the onset of retinitis pigmentosa in childhood or early adolescence. Members of the Usher Syndrome Consortium, whose objective is to locate and isolate the genes for Usher syndrome, have pooled linkage data from 36 families with 111 affected individuals. We report the analysis of 206 blood group, protein, and DNA marker polymorphisms. No evidence of linkage heterogeneity among families was found for any of the markers studied; the negative lod scores exclude the locus for this disease from about 39 per cent of the genome. Our results indicate the regions of the genome to which our continuing efforts should be directed. Author.

**The effect of furosemide on evoked otoacoustic emissions in guinea pigs.** Ueda, H., Hattori, T., Sawaki, M., Niwa, H., Yanagita, N. Department of Otorhinolaryngology, Nagoya University, School of Medicine, Japan. *Hearing Research* (1992) October, Vol. 62 (2) pp. 199–205.

After recording transiently evoked otoacoustic emissions (TEOAEs) to a click stimulus in guinea pigs by using the IL088 which was developed by Bray and Kemp (1987) for easy recording and analysis of TEOAE, the changes after intravenous administration of furosemide (30 mg/kg or 50 mg/kg) were examined. The wave of the TEOAE could be detected from 20 of 24 ears (83 per cent). After the i.v. injection of furosemide (30 mg/kg), TEOAE powers (total echo power and highest peak power in FFT pictures) decreased quickly and showed minimum values after 5–10 min. Then they increased rapidly and recovered normally within 60 min.



after injection. However, no ears showed TEOAEs during the 5- to 10-min period following the injection of the 50 mg/kg dose of furosemide. They then recovered slowly as compared with the group treated with the lower dose of furosemide (30 mg/kg). These changes are similar to those of the endocochlear potential (EP) after furosemide injection. These data support the notion that the EP can contribute to the mechanism of TEOAE generation. Author.

**A comparison of changes in the stereocilia between temporary and permanent hearing losses in acoustic trauma.** Gao, W. Y., Ding, D. L., Zheng, X. Y., Ruan, F. M., Liu, Y. J. Department of Otolaryngology, Chang Zheng Hospital, Shanghai, People's Republic of China. *Hearing Research* (1992) September, Vol. 62 (1), pp. 27–41.

A comparison of stereociliary changes at different post-exposure intervals in ears with temporary and permanent hearing losses has been made. Twenty guinea pigs were exposed to either 110 dB SPL broadband white noise for 30 mins ( $n = 10$ ) or 120 dB SPL white noise for 150 mins ( $n = 10$ ). The recovery patterns for threshold shifts for both groups were systematically assessed at regular post-exposure intervals for 80 days, using the auditory cortex evoked response to tone bursts between 0.5 and 8 kHz. Thirty-two animals that had been exposed to the same noise at either 110 dB for 30 min ( $n = 16$ ) or 120 dB for 150 min ( $n = 16$ ) were decapitated for scanning electron microscopic examination at the same post-exposure intervals. The threshold shifts induced by 110 dB noise were reversible while those induced by 120 dB were generally irreversible, although extreme variabilities existed among the animals. In the acute TTS ears, damage was confined to the third row of OHCs, where only the tips of the stereocilia were affected. Neither discontinuity of cuticular plate nor expelled cytoplasm was found in these cells. In the lesions of PTS, either all the three rows of OHCs or the IHCs and the first row of OHCs were involved. The entire length of the stereocilia, more severe in the lower part was always damaged. Expelled cytoplasm and fusion between stereocilia were frequently seen. In the chronic TTS ears, no abnormalities of stereocilia were found while in the PTS ears, a complete absence of the organ of Corti was noticed. The results of the present study clearly suggest that the status of the lower part of the stereocilia and the continuity of the cuticular plate play an important role in determining the reversibility of threshold shifts. Author.

**Influence of experimentally elevated blood viscosity on the auditory nerve-brainstem evoked response and threshold.** Lidan, D., Yedgar, S., Aronson, H. B., Sohmer, H. Department of Physiology, Hebrew University, Hadassah Medical School, Jerusalem, Israel. *Hearing Research* (1992) September, Vol. 62 (1), pp. 57–62.

Blood viscosity, due to its effect on blood flow, is one of the determinants of oxygen delivery. Therefore the influence of elevated blood viscosity on hearing was studied in rats using the auditory brainstem response (ABR) threshold, wave 1 latency, brainstem transmission time (BTT) and wave 1/4 amplitude ratio. Whole blood viscosity (WBV) was elevated by 15–21 per cent in two different ways: elevating the hematocrit (Polycythemia) by acclimation in a hypobaric chamber, or elevating the plasma viscosity by infusing a solution of Polyvinylpyrrolidone-360 (PVP). ABR was recorded before and 24 h after the blood viscosity was elevated, so that each rat served as its own control. Paired t-tests showed that there was no statistically significant difference in the ABR parameters in each of the groups as a consequence of blood viscosity elevation. In conclusion, the elevation of WBV to this degree for this duration, using two different techniques had no effect either on the function of the auditory nerve and the more peripheral sites, or on the central auditory pathway as studied by ABR. Author.

**Auditory evoked response in patients of diabetes mellitus.** Mukhopadhyay, S., Dhamija, R. M., Selvamurthy, W., Chaturvedi, R. C., Thakur, L., Sapra, M. L. Defence Institute of Physiology and Allied Sciences, Delhi Cantt. *Indian Journal of Medical Research* (1992) April, Vol. 96, pp. 81–6.

Brainstem auditory evoked response (BAER) and the mid latency response (MLR) were recorded in 25 diabetic men and compared with a group of 25 control subjects. The threshold of hearing was higher ( $P$  less than 0.001) in the patients. The BAER peak latencies were also significantly prolonged in both the ears; however, the degree of prolongation was more prominent in the right ear. The interpeak latencies of waves I–III were also prolonged ( $P$  less than 0.01) in the left ear, with non significant increase noticed in the right

ear also. The wave V amplitude was lower ( $P$  less than 0.05) in diabetics. The MLR, on the other hand, was not affected in patients. These findings suggest functional impairment in the auditory pathway in patients of diabetes mellitus. Author.

**Loracarbef versus penicillin V in the treatment of streptococcal pharyngitis and tonsillitis.** Muller, O., Spirer, Z., Wettich, K. Hadassah Hospital Paediatrics Department, Tel-Aviv, Israel. *Infection* (1992) September–October, Vol. 20 (5), pp. 301–8.

Ten-day, double-blind, randomized, parallel treatment regimens of loracarbef (200 mg capsule twice daily or 15 mg/kg/day oral suspension in two divided doses up to a maximum of 375 mg/day;  $n = 169$ ) and penicillin V (250 mg capsule four times daily or 20 mg/kg/day suspension in four divided doses up to a maximum of 500 mg/day;  $n = 175$ ) were compared in the treatment of group A beta-haemolytic streptococcal (GABHS) pharyngitis and tonsillitis. Post-therapy clinical responses were similar for evaluable patients in both treatment groups: 97.4 per cent of the loracarbef group (101/115 patients cured and 11/115 improved) and 96.0 per cent of the penicillin group (101/124 patients cured and 18/124 improved). A statistically significant difference in the pathogen elimination rate was noted between treatment groups: post-therapy throat cultures were negative for GABHS in 94.8 per cent (109/115) of loracarbef-treated patients compared with 87.1 per cent (108/124) of penicillin-treated patients ( $P = 0.040$ ). Loracarbef and penicillin V were comparable in terms of safety. Headache and nausea/vomiting were the most common events reported during therapy (nausea/vomiting were slightly less common in the loracarbef group). Three patients in each group were discontinued from the study due to drug-related adverse events; one due to rash in the loracarbef group and one due to rash and one due to vomiting in the penicillin group. These data support the conclusion that loracarbef twice daily is more effective in eradicating GABHS than penicillin V four times daily, and the two drugs are comparable in safety and clinical efficacy in the treatment of GABHS pharyngitis and tonsillitis. Author.

**Antibiotic iontophoresis in the management of burned ears.** Rigano, W., Yanik, M., Barone, F. A., Baibak, G., Cisló, C. St Vincent Medical Centre, Toledo, OH. *Journal of Burns Care and Rehabilitation* (1992) July–August, Vol. 13 (4), pp. 407–9.

Severe deformities of the ears are a distressing problem after burn injury. Successful management of chondritis has been elusive. Antibiotic iontophoresis has been used in the management of burned ears in patients who have been admitted to the St Vincent Medical Centre Burn Unit since 1983. There were 145 ear burns in 92 consecutive patients who received prophylactic penicillin or gentamicin iontophoresis and who were admitted from 1983 through 1990. A retrospective analysis of all patients who were admitted to the burn unit from 1967 to 1983 was done to review the outcome for patients with burned ears when conventional treatment was used. The incidence of infection, need for chondrectomy, and ear infection were virtually eliminated by management with antibiotic iontophoresis. In addition, no complications were noted when antibiotic iontophoresis was used. Antibiotic iontophoresis provides a safe, simple, and effective way to manage burned ears and thereby limits postburn ear deformities. Author.

**Nasopharyngeal carcinoma in situ in nasopharyngeal carcinoma.** Chan, C. W., Nicholls, J. M., Sham, J. S., Dickens, P., Choy, D. Department of Pathology, University of Hong Kong. *Journal of Clinical Pathology* (1992) October, Vol. 45 (10), pp. 898–901.

AIMS: To assess the presence of carcinoma in situ (CIS) in patients with nasopharyngeal carcinoma (NPC) and to see if the number of biopsy sites facilitates detection of CIS. METHODS: Formalin fixed, paraffin wax embedded biopsy specimens ( $n = 285$ ) from 187 patients with NPC in 1987 were studied for the presence of CIS as well as for the histological assessment of the subtype of CIS. RESULTS: Fifteen (8 per cent) patients had CIS, representing 8.3 per cent of all new patients with NPC and 11.6 per cent of patients with persistent disease or relapse. CIS was undifferentiated or poorly differentiated, no cases of well differentiated squamous cell CIS were identified. There was no significant difference in the incidence of CIS when multiple endoscopic biopsy specimens were taken rather than single forceps biopsy specimens. CONCLUSIONS: CIS can only be identified in a few patients with NPC largely because of late presentation with advanced disease at the time of diagnosis and the focal nature of the dysplastic process. The presence of dysplasia in relapses of NPC suggests that these tumours

may be second growths rather than regrowths of a primary tumour. Author.

**Microlipoinjection for the elevation of depressed full-thickness skin grafts on the nose.** Hambley, R. M., Carruthers, J. A. Department of Medicine, University of British Columbia, Vancouver, Canada. *Journal of Dermatologic Surgery and Oncology* (1992) November, Vol. 18 (11), pp. 963–8.

**BACKGROUND:** Full-thickness skin grafts on the dorsum of the nose may heal depressed and might benefit from elevation. Microlipoinjection has been used to elevate depressed tissue; however, the long-term persistence of the augmentation is questioned. **OBJECTIVE:** To determine whether microlipoinjection beneath depressed full-thickness grafts on the dorsum of the nose can provide effective and persistent graft elevation. **METHODS:** Microlipoinjection was performed at one to three sessions under depressed full-thickness skin grafts on the nose of four patients. Their appearance was assessed clinically and photographically for the amount of correction at their last postmicrolipoinjection visit. **RESULTS:** All four patients had clinically significant elevation of their full-thickness skin graft. In the two patients followed for over three years, significant augmentation persisted. **CONCLUSION:** Microlipoinjection can provide cosmetically useful soft tissue augmentation under depressed full-thickness skin grafts; this augmentation can persist. Author.

**Stents for nasal vestibule.** Whitaker, D. C., Fyler, A., Sears, J. K. Department of Dermatology, University of Iowa Hospitals and Clinics, Iowa City 52242. *Journal of Dermatologic Surgery and Oncology* (1992) October, Vol. 18 (10), pp. 913–5.

A method employing vinyl polysiloxane and polyethylene chemical tubing to make nasal stents is described. Vinyl polysiloxane stents, when well moulded, are comfortable and easily tolerated. The technique has been useful for maintaining patent nares and enhancing graft viability. Author.

**Neurogenic effects on the palatopharyngeal muscle in patients with obstructive sleep apnoea: a muscle biopsy study.** Edstrom, L., Larsson, H., Larsson, L. Department of Neurology, Karolinska Institute, Karolinska Hospital, Stockholm, Sweden. *Journal of Neurology, Neurosurgery and Psychiatry* (1992) October, Vol. 55 (10), pp. 916–20.

Muscle biopsies from the palatopharyngeal muscle of eight patients with obstructive sleep apnoea were performed during uvulopalatopharyngoplasty. Control biopsies were performed during tonsillectomy in seven control patients with no history of symptoms suggesting obstructive sleep apnoea. The diagnosis was based on the patient's history and a whole night recording of arterial oxygen saturation and respiration movements. The mean number of oxygen desaturations  $>$  or = 4 per cent per sleeping hour was 39 (range 7–80) in patients with obstructive sleep apnoea. In the control patients the occurrence of muscle fibre type and size relation between type I and type II fibres were comparable to what is found in the quadriceps femoris muscle, but the mean size of the fibres was  $<$ 25 per cent of what is found in limb muscles. All biopsies from patients with obstructive sleep apnoea showed abnormalities. Atrophy with a fascicular distribution, increased number of angulated atrophic fibres, a twin or multiple peak distribution of the fibre size spectra, and an abnormal distribution of fibre types in many muscle fascicles corresponding to 'type grouping' all points to a neurogenic alteration. This neurogenic lesion may be a primary phenomenon or secondary to the trauma of repetitive and prolonged stretching of the pharyngeal structures during apnoeas. A disturbance of the function of the dilating muscles of the upper airway may be important in causing the abnormal airway collapses seen in obstructive sleep apnoea. Author.

**Arcanobacterium haemolyticum in children with presumed streptococcal pharyngotonsillitis or scarlet fever.** Karpathios, T., Drakonaki, S., Zervoudaki, A., Coupari, G., Fretzayas, A., Kremastinos, J., Thomaidis, T. Second Department of Pediatrics, A. P. Kyriakou Children's Hospital, Athens, Greece. *Journal of Pediatrics* (1992) November, Vol. 121 (5 Pt 1), pp. 735–7.

*Arcanobacterium haemolyticum* was cultured from pharyngeal specimens obtained from 12 of 129 children with pharyngotonsillitis, some of whom had a scarlatiniform rash. This organism should be considered to be a cause of infections that are clinically similar to those caused by beta-hemolytic streptococci. Author.

**Symptoms, anxiety and handicap in dizzy patients: development of the vertigo symptom scale.** Yardley, L., Masson, E., Verschuur, C., Haacke, N., Luxon, L. MRC Human Movement and Balance Unit, National Hospital for Neurology and Neurosurgery, London, UK. *Journal of Psychosomatic Research* (1992) December, Vol. 36 (8), pp. 731–41.

Questionnaires assessing symptoms, anxiety and handicap were completed by 127 vertiginous patients. Factor analysis identified four distinct symptom clusters which formed the basis for the construction of scales quantifying the number and frequency of symptoms of: (a) vertigo (of long and short duration); (b) autonomic sensations and anxiety arousal; and (c) somatization. Scores on the vertigo severity scale were significantly related to clinical diagnosis and had near-zero correlations with measures of anxiety. Vertigo severity, autonomic signs and depressed mood each independently contributed to variance in handicap, taking precedence over the relationship between handicap and trait and state anxiety. Our findings suggest that the familiar association between anxiety and vertigo may be mediated principally by autonomic symptomatology arising as a result of somatopsychic and psychosomatic processes. Author.

**Comparison of in situ hybridization using different nonisotopic probes for detection of Epstein-Barr virus in nasopharyngeal carcinoma and immunohistochemical correlation with anti-latent membrane protein antibody.** Brousset, P., Butet, V., Chittal, S., Selves, J., Delsol, G. Anatomical Pathology Laboratory, Centre Hospitalier Universitaire Purpan, Toulouse, France. *Laboratory Investigation* (1992) October, Vol. 67 (4), pp. 457–64.

**BACKGROUND:** The detection of Epstein-Barr virus (EBV) in nasopharyngeal carcinoma (NPC) may be of diagnostic importance, particularly in cases from nonendemic areas. For cellular localization of viral genomes, cold in situ hybridization methods for the demonstration of EBV-associated NPC remain difficult and relatively insensitive for routinely processed tissues. **EXPERIMENTAL DESIGN:** The aim of the present study was to assess the importance of tissue processing and the hybridization targets to improve the sensitivity of the cold in situ hybridization method. In situ hybridization was performed in six cases of NPC using three biotinylated EBV cDNA probes (BamHI W/IR1, BamHI Y/EBNA2, XhoI/latent membrane protein) and two cocktails of EBER and BHLF1 oligonucleotides labelled with fluorescein isothiocyanate on routinely fixed and paraffin embedded sections. In two cases, in situ hybridization was also performed on specially processed (ModAMeX) sections. Immunohistochemistry was used to detect EBV-induced antigens using monoclonal antibodies against latent membrane protein, EBNA2 and ZEBRA (BZLF1). **RESULTS:** All cases showed EBV nucleic acids regardless of the tissue preparation with the three cDNA probes and on routinely processed sections with EBER oligonucleotides. By using cDNA probes, the best EBV DNA signal was obtained with BamHI W without heating of slides in tissue sections processed by ModAMeX, which probably gives rise to large amounts of single stranded DNAs. All cases positive with cDNA probes were found to be positive with EBER oligonucleotides and negative with BHLF1. However, on routinely processed paraffin sections, the signals with EBER oligonucleotides were stronger than with BamHI W cDNA probe. Dual labelling with in situ hybridization and immunohistochemistry showed that the hybridization signals were restricted to malignant epithelial cells. Latent membrane protein expression was detectable in four of six EBV nucleic acid-positive cases on both ModAMeX and routinely processed sections. The anti-EBNA2 and anti-ZEBRA antibodies were found to be negative on the two cases processed by ModAMeX. **CONCLUSIONS:** Cold in situ hybridization, in particular with EBER oligonucleotides, appears to be more reliable than immunohistochemistry with anti-latent membrane protein antibody to detect EBV in NPC in routine pathology. These findings confirm a distinctive phenotype (latent membrane protein  $\pm$ , EBNA2-, ZEBRA-) of EBV-positive NPC. The negative staining for BHLF1 oligonucleotides further supports the viral latency. Author.

**Tumour control after stereotactic radiosurgery in neurofibromatosis patients with bilateral acoustic tumours.** Linskey, M. E., Lunsford, L. D., Flickinger, J. C. Department of Neurological Surgery, University of Pittsburgh School of Medicine, Pennsylvania. *Neurosurgery* (1992) November, Vol. 31 (5), pp. 829–38; discussion 838–9.

During a four-year interval, 17 patients with bilateral acoustic



tumours (vestibular schwannomas) underwent unilateral stereotactic radiosurgery using a multisource gamma unit; two patients underwent radiosurgery of both tumours in separate sessions. Eleven patients with unoperated contralateral tumours served as concurrent controls to compare the effects of radiosurgery with the natural history of acoustic tumours. After radiosurgery, the tumour control and regression rates were 89.5 and 21.1 per cent, respectively (median neuroimaging follow-up, 1.4 years; range, 0.3–3.9). The tumour regression rate increased to 40 per cent for patients evaluated at least 12 months after radiosurgery. In comparison to the unoperated contralateral tumours, stereotactic radiosurgery achieved tumour control, as assessed by the ultimate change in tumour size at follow-up ( $P$ , 0.012), the change in tumour size over time ( $P$ , 0.006), and tumour growth rates ( $P$ , 0.003). This study provided convincing evidence that tumour stabilization after radiosurgery (as assessed by neuroimaging) truly represented tumour control. The incidence of delayed facial neuropathy after microsurgery compared favourably with the incidence reported after microsurgical removal. Some hearing was preserved in one-third of the patients who had preoperative hearing, including three patients who were contralaterally deaf. Stereotactic radiosurgery should be considered as a primary surgical modality for many patients with neurofibromatosis Type II. Author.

**Maxillary osteomyelitis and spontaneous tooth exfoliation after herpes zoster.** Mintz, S. M., Anavi, Y. Detroit Receiving Hospital, Michigan. *Oral Surgery, Oral Medicine, Oral Pathology* (1992) June, Vol. 73 (6), pp. 664–6.

Reports of spontaneous tooth exfoliation and osteonecrosis trigeminal herpes zoster are extremely rare and have been sporadic. This article reports a pertinent case of a 50-year-old man who exhibited prodromal odontalgia before the appearance of vesicular mucocutaneous lesions, together with severe destruction of the maxillary bone and exfoliation of multiple teeth. This patient was successfully treated using a unique closed nasal-vestibular drainage system for the ultimate control of maxillary bone viability. A review and analysis of the clinical aspects and the pathogenesis of herpes zoster and bone necrosis are discussed. Author.

**Progressive hearing loss in infants with asymptomatic congenital cytomegalovirus infection.** Williamson, W. D., Demmler, G. J., Percy, A. K., Catlin, F. I. Department of Pediatrics, Baylor College of Medicine, Houston, TX. *Pediatrics* (1992) December, Vol. 90 (6), pp. 862–6.

Congenital cytomegalovirus (CMV) infection as a major public health problem because 30,000 to 40,000 neonates with the infection are born each year in the United States. Although 90 per cent of the congenitally infected infants are asymptomatic at birth, evidence is accumulating that these infants are at risk for audiologic, neurologic and developmental sequelae. The current study describes the audiologic outcome of 59 infants with asymptomatic congenital CMV infection compared with 26 control infants. Eight of 59 infected infants had congenital sensorineural hearing loss (SNHL) but none of the control subjects did. Longitudinal audiologic assessments revealed that five of the eight infants had further deterioration of their SNHL; a ninth infant with initially normal hearing experienced a unilateral SNHL during the first year of life, with further deterioration subsequently. The frequency of SNHL was similar for infected infants born to mothers with recurrent CMV infections during pregnancy (two of nine) and for those born to mothers who experienced primary CMV infections (5 of 26). There was a significant difference between the occurrence of hearing loss in infected infants with normal computed tomographic scans (two of 40) compared with those with either periventricular radiolucencies (4 of 13) or calcifications (one of three). Children with SNHL often have no identified cause of the loss; thus, it is likely that many of these children had asymptomatic congenital CMV infection. Given the progressive nature of SNHL associated with asymptomatic congenital CMV infection, longitudinal audiologic assessments are mandatory. Author.

**Congenital malformations of the cervicothoracic lymphatic system: embryology and pathogenesis.** Zadvinskis, D. P., Benson, M. T., Kerr, H. H., Mancuso, A. A., Cacciarelli, A. A., Madrazo, B. L., Mafee, M. F., Dalen, K. Department of Diagnostic Radiology, William Beaumont Hospital, Royal Oak, Michigan. *Radiographics* (1992) November, Vol. 12 (6), pp. 1175–89.

Familiarity with the embryology of the lymphatic system is helpful in understanding the pathogenesis and radiologic appearance of

lymphangiomas of the cervicothoracic region. By considering anatomic location and radiologic appearance, one can predict the type of lymphangioma present, the primordial lymph sac from which the malformation arose, and when it formed in embryonic life. Cystic hygromas are composed of large, dilated lymphatic spaces. They form when a primordial lymph sac fails to reestablish communication with the central venous system from which it arose. These lesions may also result from an aberrant bud arising from a primordial lymph sac. Cavemous and capillary lymphangiomas are composed of smaller lymphatic channels. They form from abnormally sequestered buds of the developing lymphatic mesenchyme responsible for the fine meshwork of terminal branches in the periphery of the embryo. Their growth may be inhibited by the relatively tougher tissues in the periphery (e.g. skin and muscle) compared with the relatively loose fatty connective tissue in which cystic hygromas form. Not only can all types of lymphangioma occur in one lesion, but lymphatic and vascular malformations may also coexist. Author.

**Mucosal immunology of the upper respiratory tract.** Bernstein, J. M. Department of Otolaryngology, State University of New York, Buffalo. *Respiration* (1992), Vol. 59 Suppl 3, pp. 3–13.

The palatine tonsils and nasopharyngeal adenoids represent the predominant immunocompetent tissue of the upper respiratory tract. Its major function is as a first line of defense against viral, bacterial, and food antigens that enter the upper aerodigestive system. Another major function of the tonsils and adenoids is to supply the local mucosal immune system of the upper respiratory tract with dimeric IgA-producing B cells. Secretory IgA has particular hydrophilic properties and is capable of preventing adsorption and penetration of bacteria and/or viruses into the upper respiratory tract mucosa. In addition, the role of the indigenous flora of the upper respiratory tract, particularly the viridans streptococci has been emphasized as providing a valuable source of bacterial interference to the colonization of potential pathogens. Author.

**Familial occurrence of combined pigment epithelial and retinal hamartomas associated with neurofibromatosis 2.** Bouzas, E. A., Parry, D. M., Eldridge, R., Kaiser-Kupfer, M. I. National Eye Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, Maryland 20892. *Retina* (1992), Vol. 12 (2), pp. 103–7.

Combined pigment epithelial and retinal hamartomas are rare lesions that usually occur sporadically in individuals without systemic abnormalities. However, they have been reported in isolated patients with neurofibromatosis 1 and 2. No familial cases have been reported. The cases of four patients with unilateral macular lesions from three consecutive generations of a single family are presented: two of the patients also have neurofibromatosis 2. The ophthalmoscopic appearance of their ocular lesions resembles combined pigment epithelial and retinal hamartomas. The morphologic differences in the lesions of these four patients, whose ages are eight months, five years, 29 years and 65 years, may serve to demonstrate the evolution of this type of hamartoma. Author.

**Place-specific derived cochlear microphonics from human ears.** Ponton C. W., Don, M., Eggermont, J. J. Electrophysiology Laboratory, House Ear Institute, Los Angeles, California. *Scandinavian Audiology* (1992) Vol. 21 (3), pp. 131–41.

The high-pass noise masking technique was used to obtain derived frequency-specific cochlear microphonics (CM) from subtracted waveforms to rarefaction and condensation stimuli recorded with a tympanic membrane electrode. Two characteristics suggest that the response is place-specific CM: the derived response retains the same frequency as the stimulating toneburst and the response follows the stimulus polarity. For click stimulation, derived neural responses make the place-specific CM difficult to observe except in the 2–1 kHz derived band. In contrast, place-specific CM evoked by 0.5 and 1 kHz tonebursts can usually be detected in at least three derived bands. The amplitude of the response is largest in the derived band with centre-frequency (CF) just above that of the toneburst. This discovery of a place-specific CM offers the possibility of assessing (outer) hair cell function in the apical part of the human cochlea. Author.

**Effects of adaptation on electrocochleography and auditory brain-stem responses in the elderly.** Soucek, S., Mason, S. M. ENT Department, St. Mary's Hospital, Nottingham, UK. *Scandinavian Audiology* (1992) Vol. 21 (3), pp. 149–52.



Changes in the amplitude and latency of the evoked potentials in electrocochleography (ECoChG) and auditory brainstem responses (ABR) produced by increased stimulus rates (adaptation) were investigated using an extratympanic ECoChG technique with simultaneous recording of the ABR in 12 elderly patients, and compared with those of eight normally hearing young adult subjects. Although the absolute latencies of the action potential (AP) and ABR waves were delayed in the elderly, the shift in latency of these components with increased stimulus rate was similar in both groups of subjects. Amplitudes of the AP and wave III component were reduced with increased stimulus rate to a degree which again was similar in both the elderly and young adults. On this basis we suggest that synaptic connections to nerve fibres from surviving hair cells in the elderly are functioning so that disturbance of this part of the acoustic nerve is not a feature of presbycusis. Author.

**The I' potential of the brain-stem auditory-evoked potential.** Moore, E. J., Semela, J. J., Rakerd, B., Robb, R. C., Ananthanarayan, A. K. Department of Audiology and Speech Sciences, Michigan State University, East Lansing. *Scandinavian Audiology* (1992), Vol. 21 (3), pp. 153–6.

We have consistently recorded a positive wave which precedes wave I, and is called I', within the human brain-stem auditory-evoked potential. It is postulated that I' represents initial neural activity of the auditory nerve, which presumably has as its origin auditory nerve dendrites. Thus, I' may represent a summed far-field dendritic potential from currents of excitatory postsynaptic potentials. We report latency and amplitude values of I'. Author.

**The super-bass bone-anchored hearing aid compared to conventional hearing aids. Audiological results and the patients' opinions.** Snik, A. F., Jorritsma, F. F., Cremers, C. W., Beynon, A. J., van den Berge, N. W. ENT Department, University Hospital, Nijmegen, The Netherlands. *Scandinavian Audiology* (1992), Vol. 21 (3), pp. 157–61.

Twelve patients with severe mixed hearing loss (PTA ranging from 70 to 108 dB HL) were provided with the percutaneous 'super-bass HC 220' bone-anchored hearing aid (BAHA) to replace their former hearing aid. Five had previously worn an air-conduction hearing aid (behind-the-ear type, BTE) which could no longer be used because of recurrent otorrhoea; the others had previously worn a conventional (transcutaneous) bone-conduction hearing aid (CBHA) which had caused serious complaints, such as headaches or skin irritation. Free-field speech audiometry in the subgroup of patients who used to wear a CBHA revealed that the maximum intelligibility score with the BAHA was equal to or better than that obtained with the CBHA (range from 0 to +27 per cent). In three of the five patients who used to wear a BTE, the speech scores were poorer with the BAHA than with the BTE (range from -13 to -40 per cent). For the remaining two patients, the difference in scores was 0 and +10 per cent. In conclusion, speech recognition with the BAHA HC220 in the patients with severe mixed hearing loss was comparable to, or better than, that with a CBHA. Compared to an air-conduction hearing aid, the results may be considerably poorer. The results of the questionnaire were in good agreement with the measurements and support the conclusions. Author.

**The feasibility of using oto-acoustic emissions to monitor cochlear function during acoustic neuroma surgery.** Cane, M. A., O'Donoghue, G. M., Lutman, M. E. MRC Institute of Hearing Research, General Hospital, Nottingham, UK. *Scandinavian Audiology* (1992), Vol. 21 (3), pp. 173–6.

The feasibility of using evoked oto-acoustic emission (EOAE) measurement for intra-operative monitoring of cochlear function was assessed during removal of an acoustic neuroma in a 53-year-old woman with normal hearing on the operated side prior to surgery. The high level of noise in the operating theatre was the only material problem encountered and this was not sufficient to prevent recording of identifiable waveforms. During manipulation of the brainstem, damage to the cochlea was indicated by an increase in EOAE latency and its eventual disappearance. A total hearing loss in the operated ear was revealed after surgery. Monitoring cochlear function with EOAEs is probably best considered at present as an adjunct to auditory brainstem response monitoring of the composite cochlea and eighth nerve, thus providing differential information. Author.

**Cochlear and neural dysfunction in acoustic neuroma: can they be separately revealed by auditory brain-stem wave V latency?**

Prosser, S., Arslan, E., Turrini, M., Rosignoli, M. Audiology Service of ENT Clinic, University of Ferrara, Italy. *Scandinavian Audiology*, (1992), Vol. 21 (3), pp. 195–200.

Cochlear and retrocochlear lesions may be differentiated by a diagnostic index (D5), which is derived from the patient's auditory brain-stem wave V latency and pure-tone hearing threshold at 2 to 4 kHz. The D5 values obtained from 49 cases of acoustic neuroma (AN) have been shown to share some properties with D5 values of patients with cochlear hearing loss (280 cases), indicating a lesser prolongation of wave V latency in cases with pronounced hearing loss. Assuming this finding is indicative of some degree of cochlear impairment concomitant to the neural dysfunction, AN data were corrected in an attempt to remove the effects of cochlear impairment. The resulting D5 values could reflect the delay in wave V solely due to the neural dysfunction. A significant relationship between these D5 values and tumour size seems to support this hypothesis. Author.

**Indices of hearing in patients with central auditory pathology. I. Detection and discrimination.** Thompson, M. E., Abel, S. M. Hearing Research Laboratory, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Ontario, Canada. *Scandinavian Audiology Supplement* (1992), Vol. 35, pp. 3–15.

This paper describes the effect of site of lesion on auditory detection, discrimination and speech processing. Three groups of ten patients with confirmed pathology of the eighth nerve and right and left temporal cortex and two normal-hearing control groups, differing with respect to hospitalization, participated. In each of the 50 subjects, measurements were made of detection thresholds, and difference limens for frequency and duration for 50 and 300 ms pure tones of 500 Hz and 2000 Hz. Consonant discrimination was assessed using the Four Alternative Auditory Feature Test (Foster and Haggard, 1979), presented in quiet. Subjects with left temporal pathology had the largest frequency and duration difference limens. Those with either left temporal or eighth nerve pathology had significantly lower speech intelligibility scores that were correlated with the duration difference limen for short stimuli and detection thresholds, respectively. These findings challenge traditional views of cortical processing and highlight differences between peripheral and central mediators of speech processing. Author.

**Indices of hearing in patients with central auditory pathology. II. Choice response time.** Thompson, M. E., Abel, S. M. Hearing Research Laboratory, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, Ontario, Canada. *Scandinavian Audiology Supplement* (1992), Vol. 35, pp. 17–22.

The response times of three groups of subjects with pathology of the auditory pathway, localized either to the eighth nerve or to the right or left temporal cortex, were compared on three psychoacoustic tasks. These tasks included detection, frequency discrimination and duration discrimination. Measurements were made at two stimulus frequencies, 500 and 2000 Hz, in combination with two durations, 50 and 300 ms. The results were compared to those obtained for normal hospitalized and non-hospitalized control subjects. All subjects, except those with acoustic neuroma, had age-corrected normal hearing. Statistically significant group differences were apparent in discrimination but not detection, indicating the importance of task demands for response time measures, especially in patients with cortical pathology. The outcomes were not related to neurophysiological measures of speed or accuracy, supporting the conclusion that the time for decision-making rather than motor function had been affected. Author.

**Preoperative and postoperative magnetic resonance image evaluations of the spinal cord in cervical myelopathy.** Yone, K., Sakou, T., Yanase, M., Ijiri, K. Department of Orthopaedic Surgery, Faculty of Medicine, Kagoshima University, Japan. *Spine* (1992) October, Vol. 17 (10 Suppl), pp. S388–92.

To evaluate the morphologic changes of the spinal cord in patients with cervical myelopathy due to cervical spondylosis and ossification of the posterior longitudinal ligament, the authors measured the thickness and signal intensity of the cervical cord with magnetic resonance imaging in healthy adults and patients with cervical myelopathy, and compared these findings. In patients with cervical myelopathy, the preoperative and postoperative magnetic resonance imaging findings were compared with the severity of myelopathy and postoperative results. In healthy adults, the anteroposterior dia-

meter of the cervical cord was 7.8 mm at the C3 level and decreased at lower levels. In the patients with cervical myelopathy, the preoperative spinal anteroposterior diameter was significantly reduced at various levels corresponding to the stenosis site within the vertebral canal. In the group with ossification of the posterior longitudinal ligament, the minimal anteroposterior diameter of the cervical cord tended to decrease with increasing severity of myelopathy. However no relationship was observed between the two parameters in the cervical spondylotic myelopathy group. In the group with ossification of the posterior longitudinal ligament, surgical results were good when the postoperative anteroposterior diameter was increased, whereas in the cervical spondylotic myelopathy group there was no relationship between the two parameters. In the patients with myelopathy, a high intensity area was observed in about 40 per cent of all patients before operation and about 30 per cent after operation. However, the presence or absence of a high intensity area did not correlate with the severity of myelopathy or with surgical results in the group with ossification of the posterior longitudinal ligament and the cervical spondylotic myelopathy groups. Author.

**Spontaneous fracture of the odontoid process in rheumatoid arthritis.** Toyama, Y., Hirabayashi, K., Fujimura, Y., Satomi, K. Department of Orthopaedic Surgery, School of Medicine, Keio University, Tokyo, Japan. *Spine* (1992), October, Vol. 17 (10 Suppl), pp. S436–41.

Six cases of spontaneous fracture of the odontoid process in rheumatoid arthritis are presented. Fifty-one patients with atlantoaxial subluxation in rheumatoid arthritis underwent surgery between 1981 and 1990. This included six patients (in 10 per cent) who had subluxation accompanied by fracture of the odontoid without apparent trauma. The mean patient age was 58 years and all had a long history of rheumatoid arthritis. No trauma was considered to be the cause of the fracture. This is a fracture caused by erosion and osteoporosis of the odontoid process due to rheumatoid synovitis, ageing and steroid therapy. In addition, another cause is a dynamic load produced from the instability accompanying atlantoaxial subluxation working on the odontoid in cervical extension. It is important to remember that the odontoid process is susceptible to spontaneous fracture. Author.

**Expandable metal stents for tracheal obstruction: permanent or temporary? A cautionary tale.** Hind, C. R., Donnelly, R. J. Cardiothoracic Centre, Broadgreen Hospital, Liverpool. *Thorax* (1992) September, Vol. 47 (9), pp. 757–8.

An expandable metal stent inserted via a long-term tracheostomy successfully relieved life threatening respiratory obstruction due to benign tracheal stenosis. Later the patient's tracheostomy suction catheter became stuck on the stent and dislodged it. The stent was removed electively, without damaging the trachea, with a rigid biopsy forceps. Author.