

Abstract selection

FDG PET in head and neck cancer. Keyes, J. W. Jr., Watson, N. E. Jr., Williams, D. W. 3rd, Greven, K. M., McGuirt, W. F. Department of Diagnostic Radiology, Bowman Gray School of Medicine, Winston-Salem, NC 27157, USA. *American Journal of Roentgenology* (1997) December, Vol. 169 (6), pp. 1663–9.

In our extensive experience with FDG PET imaging in head and neck cancer, we have found the technique to be of high accuracy but of limited usefulness. This seeming paradox arises from several causes. Competing techniques such as CT, MR imaging, and even clinical examination already have good accuracy. In addition, high-resolution studies such as CT and MR imaging provide information required for treatment planning that is unavailable from FDG PET images. The high cost of FDG PET militates against its use in this setting, in which only a small marginal gain can be expected. In the special problem areas in which FDG PET might be expected to offer unique advantages, such as screening for second primary lesions, searching for unknown primary lesions, or differentiating benign salivary tumours from malignant lesions, the results of FDG PET have been disappointingly poor. Of these special problem areas, only the question of accuracy in finding occult primary lesions appears unresolved and in need of further study. The single application in which FDG PET appears to be advantageous is the posttherapy setting. In this setting, the technique is definitely superior to alternative methods of determining tumour recurrence and differentiating posttherapy sequelae such as radiation necrosis from tumour recurrence. We believe that considerable opportunity remains for further research on the use of FDG PET in head and neck cancer. Other agents such as 11C-methionine for example, might improve the diagnostic accuracy of FDG PET in some of the problem areas that we have identified, such as the early postirradiation period. We currently have such a study under way. Also, because FDG PET offers a unique way to measure tumour metabolism, further investigation of the use of FDG PET tracers to evaluate various biologic parameters such as proliferation rates or tumour hypoxia are needed. Such studies could provide a noninvasive technique to identify which fractionation schemes or combinations of therapy might be useful for individual patients. A final caveat is in order. Although our findings of the usefulness (and lack thereof) of FDG PET in head and neck cancer may be disappointing to many, these results should not be generalized to other applications of FDG PET in oncology. Each tumour type and setting presents its own specific problems, and in some instances FDG PET offers unique advantages over other imaging techniques. A good example is the setting of primary lung cancer, in which FDG PET appears clearly superior to all other methods of pretherapy screening (19–20). Author.

Can radiologists accurately predict preepiglottic space invasion with MR imaging? Loevner, L. A., Yousem, D. M., Montone, K. T., Weber, R., Chalian, A. A., Weinstein, G. S. Department of Radiology, University of Pennsylvania Medical Center, Philadelphia 19104, USA. *American Journal of Roentgenology* (1997) December, Vol. 169 (6), pp. 1681–7.

OBJECTIVE: The purpose of this study was to evaluate whether observers of MR imaging can accurately predict invasion of the preepiglottic fat (PEF) in patients with oropharyngeal and supraglottic laryngeal squamous cell carcinoma. **MATERIALS AND METHODS:** For 41 patients with pathologically proven squamous cell carcinoma of the oropharynx and supraglottic larynx, we retrospectively analyzed their MR images for the presence or absence of PEF neoplastic invasion. Unenhanced T1-weighted, fat-suppressed T2-weighted, and contrast-enhanced fat-suppressed T1-weighted scans were analyzed independently by two neuroradiologists who were unaware of the surgical findings. Proof of diagnosis was determined by pathologic analysis,

intraoperative assessment, or both. **RESULTS:** Sixteen patients had neoplastic infiltration of the PEF. All infiltration was correctly predicted by the two observers of MR imaging, resulting in a sensitivity of 100 per cent. Twenty-five patients had no invasion of the PEF by pathologic or surgical evaluation or both. Of these patients, negative findings were correctly predicted on MR imaging in 21 patients, whereas positive findings were incorrectly predicted on MR imaging in the remaining four patients, resulting in a specificity of 84 per cent and an accuracy of 90 per cent. In two of the four false-positive cases, effacement of the fat in the preepiglottic space by large tumours was mistaken for invasion. In a third patient, spread to the paraglottic space was mistaken for PEF extension. In the fourth false-positive case, glandular tissue along the ventral epiglottis may have been mistaken for tumour. The observers believed that unenhanced sagittal and axial T1-weighted scans were particularly useful because fat saturation artifacts may degrade T2-weighted and contrast-enhanced T1-weighted scans. **CONCLUSION:** Unenhanced T1-weighted MR images are highly sensitive for neoplastic infiltration of the preepiglottic space in patients with oropharyngeal and supraglottic laryngeal carcinoma who are at risk for such spread. Identification of PEF invasion is important because it affects prognosis and may affect surgical management. Author.

Empiric trial of high-dose omeprazole in patients with posterior laryngitis: a prospective study (see comments). Wo, J. M., Grist, W. J., Gussack, G., Delgado, J. M., Waring, J. P. Department of Internal Medicine, Emory University School of Medicine, Atlanta, Georgia 30322, USA. *American Journal of Gastroenterology* (1997) December, Vol. 92 (12), pp. 2160–5. Comment in: *American Journal of Gastroenterology* (1997) December, 92 (12), pp. 2143–4.

The optimal management of patients suspected with gastroesophageal reflux-related posterior laryngitis is unclear. History, physical examination, and ambulatory pH monitoring all have significant limitations in identifying patients who will respond to antireflux therapy. **OBJECTIVE:** To evaluate the merit of empiric omeprazole therapy in patients with posterior laryngitis. **METHODS:** Twenty-two patients (11 men/11 women, median age 58 years) with newly diagnosed posterior laryngitis were enrolled. All had persistent laryngeal symptoms for at least one month. An empiric trial of omeprazole at 40 mg q.h.s. was given for eight weeks. Four laryngeal symptoms (hoarseness, throat burning/pain, throat clearing, and cough) and four esophageal symptoms (heartburn, regurgitation, dysphagia, and odynophagia) were scored from 0 to three. Symptom scores were obtained before, 4 weeks after, and eight weeks after the start of omeprazole. Patients were classified as responders if they were symptom free or satisfied with results. Omeprazole was stopped in the responders to look for relapse. Ambulatory pH monitoring was performed in patients who did not respond. **RESULTS:** One patient discontinued omeprazole and withdrew from the study. In the remaining 21 patients, the total laryngeal and esophageal symptom scores significantly improved after empiric omeprazole. Fourteen patients (67 per cent) were classified as responders. Eight patients (38 per cent) had a relapse when omeprazole was stopped. Six patients (29 per cent), interestingly, did not relapse and did not require long-term antireflux therapy. Seven patients (33 per cent) were classified as nonresponders. Ambulatory pH monitoring was abnormal in four of the five patients who agreed to have this test. Increasing the dose of omeprazole to 40 mg b.i.d. provided no additional benefit in the nonresponders. **CONCLUSIONS:** Empiric omeprazole therapy is a reasonable, initial approach to patients with suspected gastroesophageal reflux-related posterior laryngitis. A significant number of patients do well with a short

course of antireflux therapy. Additionally, a third of the patients may not completely respond to intensive medical therapy despite the fact that reflux is documented. Author.

Auditory evoked potential index: a quantitative measure of changes in auditory evoked potentials during general anaesthesia.

Mantzaridis, H., Kenny, G. N. Department of Anaesthetics, Law Hospital NHS Trust, Lanarkshire, UK. *Anaesthesia* (1997) November, Vol. 52 (11), pp. 1030–6.

We describe a novel index derived from the auditory evoked potential, the auditory evoked potential index, and we compare it with latencies and amplitudes related to clinical signs of consciousness and unconsciousness. Eleven patients, scheduled for total knee replacement under spinal anaesthesia, completed the study. The initial mean (SD) value of the auditory evoked potential index was 72.5 (11.2). During the first period of unconsciousness it decreased to 39.6 (6.9) and returned to 66.8 (12.5) when patients regained consciousness. Thereafter, similar values were obtained whenever patients lost and regained consciousness. Latencies and amplitudes changed in a similar fashion. From all parameters studied, Na latencies had the greatest overlap between successive awake and asleep states. The auditory evoked potential index and Nb latencies had no overlap. The consistent changes demonstrated suggest that the auditory evoked potential index could be used as a reliable indicator of potential awareness during propofol anaesthesia instead of latencies and amplitudes. Author.

Grommets and patient satisfaction: an audit. Hellier, W. P., Corbridge, R. J., Watters, G., Freeland, A. P. Frimley Park Hospital, Surrey. *Annals of the Royal College of Surgeons (England)* (1997) November, Vol. 79 (6), pp. 428–31.

With the increasing role of evidence-based medicine we, as ENT surgeons, are being asked more and more to justify the practice of grommet insertion in children with glue ear. The audiological improvement which follows this operation is often only moderate at best. When judged solely in terms of hearing improvement, one may miss the often dramatic all-round improvement in a child which the parents frequently report to us postoperatively. We set out to confirm this clinical observation by using a retrospective questionnaire, seeking parental opinion after their children had undergone grommet insertion. We found a wide range of reported benefits as a result of grommet insertion; these include an improvement in hearing (92.1 per cent), a reduced frequency of ear infections (74.1 per cent), a reduction in postoperative GP visits (87 per cent), less time missed from school (70.7 per cent), as well as a variety of improvements in children's speech, education and general behaviour. Overall, we found that 96.7 per cent of parents were satisfied that the decision to insert grommets in their child was correct. We feel that these non-audiological factors should be taken into account when judging the potential benefit to a child, or population of children, from grommet insertion. Author.

Integrity testing of cochlear implants in the awake child. Cullington, H. E., Clarke, G. P. Audiology Department, North Riding Infirmary, Middlesbrough. *British Journal of Audiology* (1997) August, Vol. 31 (4), pp. 247–56.

Cochlear implantation is becoming a routine rehabilitation process for profoundly deaf adults and children. Often children are implanted at just two or three years of age and therefore the subsequent tuning of the device is challenging. Although some children demonstrate quick and reliable responses to electrical stimulation, there are others who do not respond consistently thus causing concern about the functioning of the device. It is therefore desirable to have an objective test of the integrity of the implanted electrodes. The principle of the integrity test is the measurement of voltages generated by the biphasic current pulses at the electrode array; this is accomplished using surface electrodes placed around the implanted ear, in conjunction with recording and averaging equipment typically used for evoked response testing. Traditional integrity testing usually requires a general anaesthetic in young children, however this study demonstrated a simple, quick and reliable method of obtaining results in the normally active child using ear-clip electrodes. Results are presented from 12 children tested in this way, and compared with results from 20 children who were tested in theatre using a different electrode configuration. The tests were performed in common ground stimulation mode,

but some measurements were also made in bipolar +1 and pseudo-monopolar modes. The three stimulation modes were compared, with the conclusion that common ground mode provides an efficient check of implant function in the awake child, while pseudo-monopolar mode may be preferable for anaesthetized patients. In addition, measurements were made in vitro using a functioning cochlear implant in a saline tank in order to investigate the current flow during stimulation. The standard procedure in this department is to perform a full intra-operative integrity test on all implanted children. The simplified technique is used to repeat the measurement post-operatively if required. Author.

Deletion mapping defines three discrete areas of allelic imbalance on chromosome arm 8p in oral and oropharyngeal squamous cell carcinomas. Wu, C. L., Roz, L., Sloan, P., Read, A. P., Holland, S., Porter, S., Scully, C., Speight, P. M., Thakker, N. Department of Medical Genetics, University of Manchester, United Kingdom. *Genes Chromosomes in Cancer* (1997) December, Vol. 20 (4), pp. 347–53.

Deletions on chromosomes arm 8p, as defined by allelic imbalance, are a frequent event in many different types of malignant tumours, including those of the head and neck. These regions are thought to harbour tumour suppressor genes. In order to define a high-density deletion map of this chromosomal arm in oral and oropharyngeal squamous cell carcinomas, we have tested for allelic imbalance in 35 such tumours with 22 short tandem-repeat polymorphisms. Overall, 21 (60 per cent) of the 35 tumours showed allelic imbalance at one or more loci on chromosome arm 8p. Interstitial deletions defined three discrete areas of deletion: at 8p23, 8p22, and 8p12–p21. Tumours of TNM stages II–IV showed a significantly higher frequency of allelic imbalance on 8p than did TNM stage I tumours. Our data suggest that there are at least three tumour suppressor loci on chromosome arm 8p that may be implicated in oral carcinogenesis. Furthermore, inactivation of such genes may be associated with high-grade tumours. Author.

Salicylate and quinine affect the central nervous system. Kenmochi, M., Eggermont, J. J. Department of Psychology, The University of Calgary, Canada. *Hearing Research* (1997) November, Vol. 113 (1–2), pp. 110–6.

Spontaneous local field potential (LFP) spindle frequencies in cat primary auditory cortex (AI) were estimated from the LFP-trigger autocorrelogram before and after application of sodium salicylate and quinine sulfate. A significant decrease (from 8.7 Hz to 7.6 Hz) was observed. The best modulation frequencies for 251 single units recorded in AI response to periodic click train stimulation also decreased (from 10 Hz to 8.6 Hz) after application of these tinnitus-inducing drugs. The results strongly suggest a central effect of salicylates and quinine in addition to their peripheral ototoxic effects. Author.

R-phenylisopropyladenosine attenuates noise-induced hearing loss in the chinchilla. Hu, B. H., Zheng, X. Y., McFadden, S. L., Kopke, R. D., Henderson, D. Center for Hearing and Deafness, Department of Communicative Disorders and Sciences, State University of New York at Buffalo, 14214, USA. *Hearing Research* (1997) November, Vol. 113 (1–2), pp. 198–206.

Reactive oxygen species, which are cytotoxic to living tissues, are thought to be partly responsible for noise-induced hearing loss. In this study R-phenylisopropyladenosine (R-PIA), a stable non-hydrolyzable adenosine analogue which has been found effective in upregulating antioxidant enzyme activity levels, was topologically applied to the round window of the right ears of chinchillas. Physiological saline was applied to the round window of the left ears (control). The animals were then exposed to a 4 kHz octave band noise at 105 dB SPL for four hours. Inferior colliculus evoked potential thresholds and distortion product otoacoustic emissions (DPOAE) were measured and hair cell damage was documented. The mean threshold shifts immediately after the noise exposure were 70–90 dB at frequencies between two and 16 kHz. There were no significant differences in threshold shifts at this point between the R-PIA-treated and control ears. By four days after noise exposure, however, the R-PIA-treated ears showed 20–30 dB more recovery than saline-treated ears at frequencies between four and 16 kHz. More importantly, threshold measurements made 20 days after noise exposure showed 10–15 dB less permanent threshold shifts in R-PIA-treated ears. The amplitudes of DPOAE also recovered to a greater extent and

outer hair cell losses were less severe in the R-PIA-treated ears. The results suggest that administration of R-PIA facilitates the recovery process of the outer hair cell after noise exposure. Author.

Age-related decline of auditory function in the chinchilla (Chinchilla laniger). McFadden, S. L., Campo, P., Quaranta, N., Henderson, D. Center for Hearing and Deafness, Department of Communicative Disorders, SUNY at Buffalo, NY 14214, USA. mcfadden@acsu.buffalo.edu. *Hearing Research* (1997) September, Vol. 111 (1–2), pp. 114–26.

The aim of this study was to examine the functional consequences of aging in the chinchilla, a rodent with a relatively long life span and a range of hearing similar to that of humans. Subjects were 21 chinchillas aged 10–15 years, and 23 young controls. Thresholds were determined from auditory evoked potentials (EVPs), and outer hair cell (OHC) functioning was assessed by measuring 2f₁–f₂ distortion product otoacoustic emissions (DPOAEs). Six cochleas from 11–12-year-old animals were examined for hair cell loss and gross stria pathology. The results show that the chinchilla exhibits a small but significant decline of auditory sensitivity and OHC functioning between three and 15 years of age, with high-frequency losses exceeding and growing more rapidly than low-frequency losses. Compared to rodents with shorter life spans, the chinchilla has a rate of loss that is more similar to that of humans, which could make it a valuable model for understanding the etiology of human presbycusis. Author.

Suprathreshold measures of auditory function in the aging chinchilla. McFadden, S. L., Quaranta, N., Henderson, D. Department of Communicative Disorders, SUNY at Buffalo, NY 14214-3007, USA. mcfadden@acsu.buffalo.edu. *Hearing Research* (1997) September, Vol. 111 (1–2), pp. 127–35.

The purpose of this study was to examine the relationship between aging and suprathreshold auditory function in the chinchilla, a rodent with a relatively long life span and a range of hearing similar to that of humans. Subjects were six 11–12-year-old chinchillas and six young controls. Tests of auditory function utilized evoked potential (EVP) recordings from electrodes implanted in the inferior colliculus and measurements of 2f₁–f₂ distortion product otoacoustic emissions (DPOAEs). Tests of frequency resolution (EVP tuning curves for a 2 kHz probe tone), temporal resolution (EVP forward masking functions using a 2 kHz probe tone), cochlear non-linearity (remote masking), and a DPOAE 'tone challenge', in which DPOAEs at six frequencies were monitored before and after each of five one-minute exposures to a 2 kHz tone at 80 dB SPL, were performed. The results indicate that aged chinchillas can exhibit deficits in suprathreshold tests of auditory function even when the test stimulus is in a region of relatively normal-hearing sensitivity. The results support the notion that aging, independent of hearing loss, can influence suprathreshold auditory function. Author.

Rapid decalcification of temporal bones with preservation of ultrastructure. Madden, V. J., Henson, M. M. Department of Pathology and Laboratory Medicine, The University of North Carolina, Chapel Hill 27599, USA. *Hearing Research* (1997) September, Vol. 111 (1–2), pp. 76–84.

Decalcification of temporal bones, especially from primates, has routinely required long periods of time and has been a major deterrent to many types of morphological studies. In this investigation, temporal bones from the monkey, *Macaca fuscata*, were decalcified with ethylene diamine tetraacetic acid (EDTA) in a microwave oven. To isolate effects of microwaves on decalcification, tissue was fixed and embedded using routine methods; only decalcification was carried out in the microwave oven. The procedure is described in detail. Instead of months, decalcification was complete in two working days. Control procedures included decalcification at room temperature and use of a regular oven at a temperature equal to that reached in the microwave. The ultrastructure of cochlear tissue was equal to or better than that obtained with routine decalcification. Author.

The free fibula bone graft for salvaging failed mandibular reconstructions. Anthony, J. P., Foster, R. D., Pogrel, M. A. Division of Plastic and Reconstructive Surgery, University of California at San Francisco 94115-1632, USA. *Journal of Oral Maxillofacial Surgery* (1997) December, Vol. 55 (12), pp. 1417–21;

discussion 1421–2.

PURPOSE: The purpose of this study was to determine the efficacy of vascularized free fibula bone grafts for mandibular salvage reconstruction. **PATIENTS AND METHODS:** Seven patients had fibula grafts after failed attempts at mandibular reconstruction. The prior attempts involved 20 operative procedures. Four of the seven patients (57 per cent) had a history of radiation to the affected mandible. Bony defects averaged 10.2 cm (range, 4.5 to 24 cm), and the associated soft tissue defects averaged 6 × 12 cm. Average follow-up was 16 months. Cosmetic (facial symmetry) and functional (speech quality, oral continence, deglutition, donor site morbidity, dental rehabilitation) results were evaluated by questionnaire and clinical examinations. **RESULTS:** Soft tissue coverage and mandibular restoration were successful in all patients, and flap survival was 100 per cent. Five of the seven patients (70 per cent) achieved good or excellent functional results, and five of seven (70 per cent) achieved good or excellent esthetic results. Complications were minimal, and the average hospital stay was 14 days. **CONCLUSIONS:** When the initial attempt at mandibular reconstruction is unsuccessful, mandibular function and esthetics can be salvaged with reliable vascularized soft tissue and bone flaps. As long as appropriate flap options are considered and the patient is medically stable, successful mandibular reconstruction should be achievable despite the number or cause of prior failed attempts. Author.

Continuous versus on demand treatment with cetirizine for allergic rhinitis. Ciprandi, G., Passalacqua, G., Mincarini, M., Ricca, V., Canonica, G. W. Department of Internal Medicine, Genoa University, Italy. *Annals of Allergy Asthma and Immunology* (1997) December, Vol. 79 (6), pp. 507–11.

BACKGROUND: Cetirizine is an antihistamine used in the treatment of allergic rhinoconjunctivitis, that has antiallergic activity. **OBJECTIVE:** The aim of this double-blind, placebo-controlled, parallel group study was to evaluate the clinical efficacy and the antiallergic activity of cetirizine, administered either continuously or on demand over a four-week period of natural allergen exposure. **METHODS:** Twenty patients, with allergic rhinoconjunctivitis due to grass and/or Parietaria pollen, were enrolled. They were randomized into two parallel groups: one group received the standard dose of 10 mg cetirizine daily and the other received placebo, all patients were allowed to take an additional daily dose of cetirizine when needed. Variables evaluated were clinical symptoms (recorded on diary cards), number of additional on demand cetirizine doses, nasal inflammatory cells, and pollen counts. **RESULTS:** The results of the present study show that patients treated with continuous administration of cetirizine achieved significant symptomatic relief and inflammatory control (decreases in numbers of infiltrating neutrophils and eosinophils) in comparison to patients treated on demand. **CONCLUSION:** Continuous treatment with cetirizine is more effective than on demand treatment. Continuous treatment reduces clinical and inflammatory variables more than symptomatic treatment and the on demand therapy can determine acceptable clinical control, but does not reduce allergic inflammation. Author.

Neurofibromatosis type 2 (bilateral acoustic schwannomas) demonstrated by Tc-99m (V) DMSA SPECT. Hirano, T., Otake, H., Shibasaki, T., Tamura, M. Department of Nuclear Medicine, Gunma University, School of Medicine, Japan. *Clinical Nuclear Medicine* (1997) December, Vol. 22 (12), pp. 847–9.

Tc-99m (V) DMSA clearly demonstrated several cranial meningiomas, bilateral acoustic neurinomas and multiple subcutaneous neurofibromas in a patient of neurofibromatosis type 2 (NF-2). The present paper describes accumulation of Tc-99m (V) DMSA in cranial schwannomas and meningiomas as well as multiple peripheral neurofibromas. Author.

The impact of day care on ventilation tube insertion. Postma, D. S., Poole, M. D., Wu, S. M., Tober, R. University of North Carolina, Chapel Hill School of Medicine 27599, USA. *International Journal of Pediatric Otorhinolaryngology* (1997) September 18, Vol. 41 (3), pp. 253–62.

OBJECTIVE: To study the effect of day care and tube type, as well as other risk factors related to ventilation tube insertion and reinsertion. **DESIGN:** A case series of 456 consecutive cases with 162 controls from a well-baby examination group evaluated for

age, sex, smoking history and day care attendance. **SETTING:** Private practice in a mid-sized, southeastern university town. **PATIENTS AND CONTROLS:** This was a referred sample of patients who were entered consecutively in a private-practice setting. All children were age five or less at entry into the study. **INTERVENTIONS:** Children underwent ventilation tube insertion with or without adenoidectomy, using standing indications. **MAIN OUTCOME MEASURES:** The primary outcome measures were whether or not a child had the need for a second set of tubes, and also determining the status of the child's ears for at least one year after tubes had extruded. **RESULTS:** Day care and younger age were both identified as risk factors associated with initial ventilation tube insertion. Only 11 per cent (seven out of 63) of home care children, as compared with 31 per cent (108 out of 346) day care children, had the insertion of ventilation tubes ($p = 0.000$). Day care children who had tubes inserted and adenoidectomy (with or without tonsillectomy) had a significantly lower rate of reintubation than children who had tube insertion alone ($p = 0.00$). Day care and young age are significant risk factors for any child, both with a first set of tubes and for ventilation tube reinsertion. Children in day care had a reintubation rate of 36 per cent as compared to 11 per cent for those in home care. Parents should be aware that day care can represent a two-fold hazard both in the observed connection between day care and tube insertion and the demonstrated increased probability of reinsertion. Any studies looking at ventilation tube outcomes need to make certain to monitor for day care attendance. Author.

HDR syndrome (hypoparathyroidism, sensorineural deafness, renal dysplasia) associated with del(10)(p13). Hasegawa, T., Hasegawa, Y., Aso, T., Koto, S., Nagai, T., Tsuchiya, Y., Kim, K. C., Ohashi, H., Wakui, K., Fukushima, Y. Department of Pediatrics, Keio University School of Medicine, Tokyo, Japan. *American Journal of Medical Genetics* (1997) December 31, Vol. 73 (4), pp. 416–8.

A combination of hypoparathyroidism, sensorineural deafness, and renal dysplasia has been considered to be a new syndrome inherited in an autosomal dominant fashion; we name the condition 'HDR syndrome'. We describe a Japanese girl who has HDR syndrome associated with de novo del (10)(p13). The chromosome deletion suggests that the putative gene(s) responsible for HDR syndrome is located at a 10pter→p13 region. Author.

Mucosal changes of the free jejunal graft in response to radiotherapy. Wei, W. I., Lam, L. K., Yuen, P. W., Kwong, D., Chan, K. W. Department of Surgery, The University of Hong Kong, Queen Mary Hospital, China. *American Journal of Surgery* (1998) January, Vol. 175 (1), pp. 44–6.

BACKGROUND: Microvascular free jejunal transfer was employed for reconstruction of pharyngeal defect resulting from circumferential resection of the hypopharynx. Postoperative radiotherapy to the neck might affect the graft, but this information was lacking. The mucosal changes of the jejunum in response to radiation were identified in this prospective study. **METHODS:** Normal jejunal mucosa was obtained at operation, and endoscopic jejunal mucosal biopsies were taken during and at completion of radiotherapy. Endoscopic biopsies were repeated at one, three, six, 12 and 24 months afterwards. All jejunal biopsies were subjected to histologic and scanning electron microscopic (SEM) examinations. Nine patients had a complete set of biopsy while five other patients who received no radiotherapy also went through a similar sequence of biopsies as controls. **RESULTS:** Histologic examination showed mucosal edema and extensive blunting of jejunal villi at the completion of radiotherapy. Increased fibrosis with focal loss of glands was noticed at three months after radiotherapy, and this remained throughout the two-year period. SEM revealed patchy loss of microvilli at completion and at one month after radiotherapy, but this feature was not apparent in biopsies taken as three months onwards, showing that it was only a transient event. **CONCLUSIONS:** Transient responses and persistent changes of jejunal mucosa to radiotherapy were identified and characterized. The presence of these mucosal lesions was not associated with any clinically significant adverse effect in the graft up to two years postradiotherapy. Author.

Association of primary intracranial meningioma and cutaneous meningioma of external auditory canal: a case report and review of the literature. Hu, B., Pant, M., Cornford, M., Walot, I., Peng, S. K. Department of Pathology, Harbor-UCLA Medical Center, Torrance, Calif 90509, USA. *Archives of Pathology in Laboratory Medicine* (1998) January, Vol. 122 (1), pp. 97–9.

A cutaneous meningioma of the external auditory canal occurred in a 48-year-old Filipino woman who had undergone subtotal resection of a dural-based intracranial meningioma at the ipsilateral cerebellopontine angle 36 months previously. Radiologic findings demonstrated a recurrence of intracranial meningioma with surface erosion and heterogeneous densities of the mastoid bone, without extension to the area of the external auditory canal. Meningioma in the external ear canal is extremely rare. To our knowledge, there have been only two previously reported cases, both without intracranial lesion. In this case, the auditory canal lesion may represent either an ectopic meningioma arising from an arachnoid cell rest or an occult direct extension from intracranial meningioma. Author.

Squamous cell carcinoma of the maxillary sinus treated with radiation therapy and conservative surgery. Itami, J., Uno, T., Aruga, M., Ode, S. Department of Radiation Therapy and Oncology, International Medical Center of Japan, Tokyo. *Cancer* (1998) January 1, Vol. 82 (1), pp. 104–7.

BACKGROUND: For patients with squamous cell carcinoma of the maxillary sinus, combined modality treatment is usually employed, involving radiation and en bloc radical surgery. In this study, local control was analyzed retrospectively in patients who underwent less aggressive piecemeal surgery. **METHODS:** Of the 37 patients irradiated between 1973 and 1992, 62 per cent were classified as having T4 lesions. Thirty-two patients underwent surgery and radiation therapy; conventional fractionation radiation therapy was used in most cases. Thirty of these patients underwent piecemeal debulking of their tumours and simultaneous radiation therapy. **RESULTS:** Local recurrence free survival at five years was 59 per cent and orbital exenteration was performed on only one patient. T classification, the number of operations, and the presence of macroscopic residual disease each had a statistically significant impact on local recurrence. For the patients with macroscopic residual disease, more than 58 gray administered in conventional fractionation appeared to be necessary to improve local control. **CONCLUSIONS:** Combined with radiation therapy, conservative surgery with piecemeal debulking was an effective method of treatment for the patients in this study. Author.

Impact of tracheotomy on colonization and infection of lower airways in children requiring long-term ventilation: a prospective observational cohort study. Morar, P., Singh, V., Jones, A. S., Hughes, J., van Saene, R. Department of Otorhinolaryngology, Royal Liverpool Children's NHS Trust of Alder Hey, UK. *Chest* (1998) January, Vol. 113 (1), pp. 77–85.

STUDY OBJECTIVES: Determination of the following: (1) colonization and infection rates in children requiring long-term ventilation initially via a transtracheal tube and subsequently via a tracheotomy; (2) the number of infection episodes per 1,000 ventilation days, during both types of artificial airways; and (3) routes of colonization/infection of the lower airways, ie, whether the pathogenesis was endogenous (via the oropharynx) or exogenous (via the transtracheal tube or tracheotomy). **DESIGN:** Observational, cohort, prospective study over 2½ years. **SETTING:** Pediatric ICU (PICU), Royal Liverpool Children's National Health Service Trust of Alder Hey, a tertiary referral center. **PATIENTS:** Twenty-two children requiring long-term mechanical ventilation initially transtracheally and subsequently via a tracheotomy. **INTERVENTION:** Nil. **RESULTS:** The lower airways were colonized in 71 per cent of children during transtracheal ventilation; posttracheotomy, this was 95 per cent ($p = 0.03$). Children developed significantly fewer infections following colonization with a microorganism posttracheotomy (8/15 pretracheotomy vs 6/21 posttracheotomy; $p = 0.013$). Throughout the study, there were a total of 17 episodes of infection, all of which were preceded by colonization. Haemophilus influenzae, Staphylococcus aureus, Acinetobacter baumannii, and Pseudomonas aeruginosa were the same four causative pathogens during mechanical ventilation both transtracheally and via tracheotomy. Forty-nine episodes of colonization were

observed, 15 pretracheotomy and 34 posttracheotomy; of these, 12 (80 per cent) and 19 episodes (56 per cent), respectively, were primary endogenous, ie, present in the oropharynx on hospital admission and subsequently at tracheotomy. Only one colonization episode (seven per cent) of exogenous pathogenesis was observed during transtracheal intubation, while 12 (35 per cent) ($p=0.02$) occurred after tracheotomy. An equal number of secondary endogenous colonization episodes (two and three, ie, acquired in the oropharynx after PICU admission and after tracheotomy, respectively, were recorded. **CONCLUSIONS:** (1) Despite a high level of hygiene, exogenous colonization without subsequent infection was common. (2) Although all patients were colonized, the infection rate was lower after tracheotomy. This may be due to enhanced immunity (medically stable) and improved tracheobronchial toilet. (3) Microorganisms in children with tracheotomy differ from those in adults. Author

Glossopharyngeal schwannoma, an uncommon posterior fossa tumour: diagnostic and therapeutic aspects: a case report. Rapana, A., Lamaida, E., Bracale, C., Lepore, P., Pizza, V., Graziussi, G. Neurosurgical Division, San Luca Hospital, Italy. *Clinical Neurology and Neurosurgery* (1997) August, Vol. 99 (3), pp. 196–8.

Among posterior fossa tumours, schwannomas arising from glossopharyngeal nerve are rare; only about 30 cases of glossopharyngeal neuroma have been described. Though a typical 'jugular foramen syndrome' has been described for tumours of this region, the clinical onset may often closely resemble that of acoustic neuromas thus misleading the diagnosis. Because of its different surgical implications, such a rare condition must be clearly recognized preoperatively. A new case is hereby reported with particular focus on clinical and surgical management. Author.

Psychological characteristics of child cochlear implant candidates and children with hearing impairments. Knutson, J. F., Boyd, R. C., Goldman, M., Sullivan, P. M. Department of Psychology, University of Iowa, Iowa City, USA. *Ear and Hearing* (1997) October, Vol. 18 (5), pp. 355–63.

OBJECTIVE: To describe the psychological status of deaf children with hearing parents who were seeking a cochlear implant and to compare them with deaf children with hearing parents who were not seeking a cochlear implant. **DESIGN:** A sample of children consecutively referred for a cochlear implant at the University of Iowa Hospitals and Clinics was contrasted on a number of standardized psychological measures with a cohort of children from Boys Town National Research Hospital, who had hearing impairments and whose families had not sought a cochlear implant. **RESULTS:** Although the comparison group evidenced more externalizing and social problems than the implant group, the means of both groups fell well within the normal range. Similarly, although mothers of the implant group rated their child's home a characterized by more positive and supportive interactions than did mothers of the children in the comparison group, both group means were well within the average range. On measures of intelligence, the two groups also did not differ. **CONCLUSION:** Overall, the study indicated that children with hearing impairments and their families who were seeking cochlear implants are not significantly different from children with hearing impairments whose parents were not seeking a cochlear implant. The results provided no support for the notion that children with hearing impairments from families seeking a cochlear implants for their child evidence more behavioural deviance than children with hearing impairments whose parents have not sought an implant. Author.

Labelling of musical interval size by cochlear implant patients and normally hearing subjects. Pijl, S. Department of Audiology, St. Paul's Hospital, Vancouver, British Columbia, Canada. *Ear and Hearing* (1997) October, Vol. 18 (5), pp. 364–72.

OBJECTIVE: To compare the performance of cochlear implant patients and normal-hearing subjects on a musical interval labelling task, and to determine whether information regarding musical interval size is available to cochlear implant patients under realistic everyday listening conditions. **DESIGN:** Two Nucleus cochlear implant patients listened to musical intervals that consisted of systematic variations of electric pulse rate on single bipolar intracochlear electrode pairs, whereas normal-hearing listeners were presented with the acoustical analog of these

stimuli. Subjects labelled the intonation quality of the stimulus intervals ('flat', 'sharp' or 'in tune'), relative to their memory for specific intervals abstracted from familiar melodies. The cochlear implant patients, in addition, performed this task with realistic acoustical musical stimuli. **RESULTS:** The interval labelling behaviour of cochlear implant subjects, at low pulse rates, was similar to that of normal-hearing subjects. Furthermore, pitch interval information does not appear to be available to cochlear implant subjects when they are listening to acoustical stimuli via their speech processors. **CONCLUSIONS:** Temporal information appears to be sufficient for the perception of musical pitch. Encoding strategies that are highly successful in restoring speech understanding do not necessarily provide information regarding melodic pitch interval size. Author.

Use of multiplex PCR for simultaneous detection of four bacterial species in middle ear effusions. Hendolin, P. H., Markkanen, A., Ylikoski, J., Wahlfors, J. J. AIV Institute, University of Kuopio, Finland. Panu.Hendolin@uku.fi. *Journal of Clinical Microbiology* (1997) November, Vol. 35 (11), pp. 2854–8.

A multiplex PCR procedure was developed for the simultaneous detection of *Alloicoccus otitidis*, *Haemophilus influenzae*, *Moraxella catarrhalis*, and *Streptococcus pneumoniae* in middle ear effusions (MEEs) from patients with chronic otitis media with effusion. The bacterial 16S rRNA gene was chosen as the target, and the procedure used one common lower primer and four species-specific upper primers. The reaction was optimized by changing the primer concentrations to yield equal amounts of amplification products. The specificity of the reaction was verified with various bacterial species found in the nasopharynx. The performance of the procedure was examined with 25 MEE specimens, and the results were compared to those obtained by conventional culture methods. A detection level of 10 bacterial cells/reaction for each of the study organisms was achieved. By conventional culture methods, eight (32 per cent) of the specimens showed growth of one of the study organisms. In contrast, 21 (84 per cent) of the specimens tested positive by the multiplex PCR. None of the culture-positive specimens were PCR negative, whereas three (12 per cent) of the PCR-positive specimens tested positive for two of the four study organisms. Thus, the multiplex PCR method improves the detection rate significantly compared to that of the conventional culture method. Author.

Neurovascular decompression of the eighth cranial nerve in patients with hemifacial spasm and incidental tinnitus: an alternative way to study tinnitus. Ryu, H., Yamamoto, S., Sugiyama, K., Uemura, K., Nozue, M. Department of Neurosurgery, Hamamatsu University School of Medicine, Shizuoka, Japan. *Journal of Neurosurgery* (1998) February, Vol. 88 (2), pp. 232–6.

OBJECT: The authors sought to clarify the clinical characteristics of tinnitus resulting from neurovascular compression (NVC) of the eighth cranial nerve. **METHODS:** The authors explored the eighth cranial nerve in the cerebellopontine cistern during neurovascular decompression (NVD) of the facial nerve in 10 patients with hemifacial spasm who suffered from incidental tinnitus on the same side. The diagnosis of NVC of the eighth cranial nerve was confirmed in all patients. This condition was found in only seven of 114 patients with hemifacial spasm alone, indicating that NVC of the eighth cranial nerve is one of the causes of tinnitus ($p<0.001$, chi-squared test). The tinnitus resolved or was markedly improved after NVD of the eighth cranial nerve in eight patients (80 per cent). Both pulsatile and continuous tinnitus responded well to NVD. All patients experienced various degrees of sensorineural hearing disturbance, but other neurotological examinations provided poor diagnostic value. **CONCLUSIONS:** It is the authors' opinion that sensorineural hearing loss and positive findings on magnetic resonance imaging are the most reliable evidence for the presence of tinnitus caused by NVC of the eighth cranial nerve. Author.

Oxidative stress and degenerative temporomandibular joint disease: a proposed hypothesis. Milam, S. B., Zardeneta, G., Schmitz, J. P. Department of Oral and Maxillofacial Surgery, University of Texas Health Science Center, San Antonio 78284-7903, USA. *Journal of Oral, Maxillofacial Surgery* (1998) February, Vol. 56 (2), pp. 214–23.

The molecular events that underlie degenerative temporomandibular joint diseases are poorly understood. Recent studies have

provided evidence that a variety of molecular species, including cytokines, matrix degrading enzymes, neuropeptides, and arachidonic acid catabolites may be involved. This paper advances the theory that mechanical stresses lead to the accumulation of damaging free radicals in affected articular tissues of susceptible individuals. This condition is called oxidative stress. The authors postulate mechanisms that may be involved in the production of

free radicals in the temporomandibular joint and in the subsequent induction of molecular events that may amplify damage of articular tissues initiated by free radicals. If the proposed model is correct, then future therapeutic strategies directed at the control of oxidative stress could be effective in the management of degenerative temporomandibular joint diseases. Author.