The Journal of Laryngology and Otology
November 1998, Vol. **112,** pp. 1112–1115

Abstract selection

Screening patients affected by common variable immunodeficiency. Masieri, S., Orlando, M. P., Ciofalo, A., Luzi, G., Zambetti, C., Filiaci, F. ENT Clinic, University La Sepienza, Rome, Italy. *Annals of the New York Academy of Sciences* (1997) December 29, Vol. 830, pp. 322–5.
Chronic immunoglobulin administration decreases the incidence of bronchial and pulmonary infections in patients affected by chronic variable immunodeficiency (CVI). In this study, an ENT screening was carried out in 22 patients affected by chronic variable immunodeficiency and treated with chronic immunoglobulin administration. All the patients underwent ENT physical examination, nasal endoscopy by fibreoptics, mucociliary transport test (MTT), anterior rhinorheomanometry (RRM), nasal provocation test with cold water (ANPT), audiometry and impedentiometry, olfactory evaluation, and paranasal sinus X rays. Dysphagia was present in 91 per cent of the patients, nasal secretion and obstruction in 77 per cent, and hypoacusia, tinnitus, and otodinia in 57 per cent. Rhinitis and pharyngitis were observed in 86 per cent of the patients, and serous middle ear effusion in 50 per cent. Confirmed maxillary sinusitis was observed in five patients. Hyposmia was observed in 50 per cent of the patients. MTT was significantly longer in the patients than in the controls (18.0 ± 10.5 vs. 11.2 ± 2.4 min; $p<0.05$). Nasal resistance was lower in patients than in controls (0.46 ± 0.32 vs 1.11 ± 0.22 Pa/L.s-1; $p<0.001$). ANPT was positive in nine patients out of 25 versus one control out of 15 ($p<0.05$). Finally, seven patients were affected by transmissive hypoacusia, and one patient by neurosensorial hypoacusia. Our results suggest that chronic immunoglobulin administration in CVI patients is not effective against ENT disorders, probably because of the important role played by nasal hyperreactivity. Frequent ENT examination and early treatment of ENT disorders are therefore suggested in order to prevent chronic disease. Author.

Vaccination against middle-ear bacterial and viral pathogens. Giebink, G. S. Department of Pediatrics and Otolaryngology, University of Minnesota School of Medicine, Minneapolis 55455, USA. giebi001@maroon.tc.umn.edu. *Annals of the New York Academy of Science.* (1997) December 29, Vol. 830, pp. 330–52.
Considerable evidence suggests that otitis media (OM) can be prevented by systemic immunization. Building on the highly effective H. influenzae type b (Hib) conjugate vaccine technology, pneumococcal conjugate vaccines are being developed to circumvent T-independence of these antigens and provide durable immunity at a very young age. Several pneumococcal conjugate vaccines are currently in clinical testing. Potential vaccine antigens of nontypable H. influenzae (NTHi) include OMP, HMW, pili, and fimbriae. Several OMPs show extensive homology among strains, but surface, determinants of others are highly variable so that antibodies to surface epitopes of one strain will not bind to surface epitopes of another. Several M. catarrhalis OMP and HMW antigens have vaccine potential, but no functional correlates of protection have been identified, and there is no clear evidence that antibody to M. catarrhalis is associated with OM protection. Attenuated viral vaccines also hold promise of preventing childhood OM. Two clinical trials with killed influenza vaccines have shown a significant reduction in OM among vaccine recipients compared to control children during periods of high influenza disease activity in the community. Passive immunoprophylaxis also has potential for preventing OM. Human bacterial polysaccharide immune globulin was protective for pneumococcal OM in children and in the chinchilla OM model. High-dose respiratory syncytial virus-enriched immunoglobulin reduced the incidence and severity of RSV lower respiratory tract infection in high-risk children. Passive immunoprophylaxis may also be effective in children with specific immune deficiencies, such as IgG2 deficiency, and patients who fail to respond to vaccines. Author.

An introduction to the genetics of normal and defective hearing. Martini, A., Mazzoli, M., Kimberling, W. Servizio di Audiologia, Clinica ORL dell'Universita di Ferrara, Italy. mma@dns.unife.it. *Annals of the New York Academy of Sciences* (1997) December 29, Vol. 830, pp. 361–74.
The recent rapid development of molecular biology techniques applied to the genetics of normal and defective hearing shed a new light on old questions regarding hearing and deafness. Genes are DNA sequences that determine characteristics, normally by specifying the sequence of aminoacids in a protein. The majority of genes is located in the chromosomes (human chromosomes have perhaps 80,000 pairs of genes). In addition there are 37 mithochondrial genes which are inherited only from the mother. One method used to identify candidate genes based on their function or pattern of tissue expression involves the construction of cDNA libraries from the target organ or tissue, in this case from the cochlea. The construction and characterization of cochlear cDNA libraries from humans and other species provide an important resource for rapid identification of cochlear genes involved in normal hearing and hearing disorders. Studies of the molecular genetics of the inner ear are hampered by the relative inaccessibility of the cochlea, by the limited number of cochlear and vestibular cells, and by our inability to maintain many of these cell types in long-term cultures. Several rodent inner-ear cDNA libraries and a human foetal cochlear cDNA library have already been constructed. Human and rodent cochlea-subtracted cDNA libraries are very useful for identifying genes controlling the development and maintenance of hearing. cDNA libraries constructed at different stages of development, and subtracted from each other, could be instrumental in identifying genes important at each stage of cochlear development. In addition, these libraries have the potential of fostering the identification of other proteins unique to the cochlea and will contribute to the identification, characterization, and functional analysis of these cochlea-specific proteins. Another important application of cDNA libraries is in identifying hearing-loss genes. Once the candidate gene for a given type of hearing loss is cloned and decoded, the structure of its protein product can be determined. This will provide insights into the biochemical function of the gene product in normal cochlear tissue, and will show why the genetic mutation results in hearing loss, that is, the recent identification of the myosin VIIa gene in Usher type IB. In addition, through the use of homologous recombination and transgenic technology, in vivo mouse models of inner-ear genetic disorders can be created. To date, 350 different genetic conditions associated with hearing impairment have been described, and during the past five years several of the genes involved in these form have already been mapped and identified. Author.

The role of IgE-mediated immunity in otitis media: fact or fiction? Mogi, G., Suzuki, M. Department of Otolaryngology, Oita Medical University, Japan. gmogi@oita-med.ac.jp. *Annals of the New York Academy of Sciences* (1997) December 29, Vol. 830, pp. 61–9.
As both OME and allergic rhinitis are common among young children, these disorders are occasionally seen in the same patients. Many clinical and experimental studies have denied the allergic etiology of OME, although type I allergic reactions in the nose cause tubal obstruction without inducing MEE because the induced obstruction remains for a short duration. An animal model study demonstrated that allergy-induced tubal obstruction disturbs the clearance of MEE significantly. Since a clinical and an experimental study showed the efficacy of allergic treatment in patients or animals having both diseases, allergy and OME should be treated simultaneously in patients with both diseases. Viral infections of the upper respiratory tract induce viral-specific IgE antibodies, which may cause mucosal inflammatory reactions

similar to those seen in type I allergy. Viral infection also triggers bacterial infection. Consequently, viral infection is a critical factor in the etiopathogenesis of OME. Author.

Appropriate use of the day care unit for rigid endoscopy of the upper aerodigestive tract. Whinney, D., Vowles, R., Harries, M. Royal National Throat Nose and Ear Hospital, London. *Annals of the Royal College of Surgeons (England)* (1998) March, Vol. 80 (2), pp. 111–4.
There is increasing pressure for more day surgery to be undertaken in the health service. In this retrospective study of 325 rigid upper aerodigestive tract endoscopies performed in the Day Care Unit of The Royal National Throat Nose and Ear Hospital, London, there were no post-discharge complications and only four patients required admission, none were, in our opinion, the direct result of day case rigid endoscopy. In our unit, the day case rate for microlaryngeal surgery is 44.8 per cent, showing that rates significantly higher than published national rates of 17.1 per cent (1993/1994) are achievable. We conclude that day case microlaryngeal surgery and diagnostic rigid endoscopy of the upper aerodigestive tract is safe if performed by suitably qualified staff in dedicated specialist units with patients selected according to existing day case criteria. Author.

Cigarette smoking and hearing loss: the epidemiology of hearing loss study. Cruickshanks, K. J., Klein, R., Klein, B. E., Wiley, T. L., Nondahl, D. M., Tweed, T. S. Department of Ophthalmology and Visual Sciences, University of Wisconsin, Madison 53705–2397, USA. cruickshanks@epi.ophth.wisc.edu. *Journal of the American Medical Association* (1998) June 3, Vol. 279 (21), pp. 1715–9.
CONTEXT: Clinical studies have suggested that cigarette smoking may be associated with hearing loss, a common condition affecting older adults. OBJECTIVE: To evaluate the association between smoking and hearing loss. DESIGN: Population-based, cross-sectional study. SETTING: Community of Beaver Dam, Wis. PARTICIPANTS: Adults aged 48 to 92 years. Of 4541 eligible subjects, 3753 (83 per cent) participated in the hearing study. MAIN OUTCOME MEASURES: The examination included otoscopy, screening tympanometry, and pure-tone air-conduction and bone-conduction audiometry. Smoking history was ascertained by self-report. Hearing loss was defined as a pure-tone average (0.5, 1, 2, and 4 kHz) greater than 25 dB hearing level in the worse ear. RESULTS: After adjusting for other factors, current smokers were 1.69 times as likely to have a hearing loss as nonsmokers (95 per cent confidence interval, 1.31–2.17). This relationship remained for those without a history of occupational noise exposure and in analyses excluding those with non-age-related hearing loss. There was weak evidence of a dose-response effect. Nonsmoking participants who lived with a smoker were more likely to have a hearing loss than those who were not exposed to a household member who smoked (odds ratio, 1.94; 95 per cent confidence interval, 1.01–3.74). CONCLUSIONS: These data suggest that environmental exposures may play a role in age-related hearing loss. If longitudinal studies confirm these findings, modification of smoking habits may prevent or delay age-related declines in hearing sensitivity. Author.

Treatment of acute otitis media with a shortened course of antibiotics: a meta-analysis). Kozyrskyj, A. L., Hildes-Ripstein, G. E., Longstaffe, S. E., Wincott, J. L., Sitar, D. S., Klassen, T. P., Moffatt, M. E. Department of Community Health Sciences, Manitoba Centre for Health Policy and Evaluation, University of Manitoba, Winnipeg, Canada. *Journal of the American Medical Association* (1998) June 3, Vol. 279 (21), pp. 1736–42.
OBJECTIVE: To conduct a meta-analysis of randomized controlled trials of antibiotic treatment of acute otitis media in children to determine whether outcomes were comparable in children treated with antibiotics for less than seven days or at least seven days or more. DATA SOURCES: MEDLINE (1966–1997), EMBASE (1974–1997), Current Contents, and Science Citation Index searches were conducted to identify randomized controlled trials of the treatment of acute otitis media in children with antibiotics of different durations. STUDY SELECTION: Studies were included if they met the following criteria: subjects aged four weeks to 18 years, clinical diagnosis of acute otitis media, no antimicrobial therapy at time of diagnosis, and randomization to less than seven days of antibiotic treatment vs seven days or more of antibiotic treatment. DATA EXTRACTION: Trial methodological quality was assessed independently by seven reviewers; outcomes were extracted as the number of treatment failures, relapses, or reinfections. DATA SYNTHESIS: Included trials were grouped by antibiotic used in the short course: (1) 15 short-acting oral antibiotic trials (penicillin v potassium, amoxicillin (-clavulanate), cefaclor, cefixime, cefuroxime, cefpodoxime proxetil, cefprozil), (2) four intramuscularceftriaxone sodium trials, and (3) 11 oral azithromycin trials. The summary odds ratio for treatment outcomes at eight to 19 days in children treated with short-acting antibiotics for five days vs eight to 10 days was 1.52 (95 per cent confidence interval (CI), 1.17–1.98) but by 20 to 30 days outcomes between treatment groups were comparable (odds ratio, 1.22; 95 per cent CI, 0.98 to 1.54). The risk difference (2.3 per cent; 95 per cent CI, −0.2 per cent to 4.9 per cent) at 20 to 30 days suggests that 44 children would need to be treated with the long course of short-acting antibiotics to avoid one treatment failure. This similarity in later outcomes was observed for up to three months following therapy (odds ratio, 1.16; 95 per cent CI, 0.90–1.50). Comparable outcomes were shown between treatment with ceftriaxone or azithromycin, and at least seven days of other antibiotics. CONCLUSION: This meta-analysis suggests that five days of short-acting antibiotic use is effective treatment for uncomplicated acute otitis media in children. Author.

Microangiopathy of the brain, retina, and cochlea (Susac syndrome). A report of five cases and a review of the literature. O'Halloran, H. S., Pearson, P. A., Lee, W. B., Susac, J. O., Berger, J. R. Department of Ophthalmology, University of Kentucky College of Medicine, Lexington 40536-0284, USA. *Ophthalmology* (1998) June, Vol. 105 (6), pp. 1038–44.
OBJECTIVE: This study reports five new cases of microangiopathy of the brain, retina, and cochlea (Susac syndrome) and reviews the world's literature. DESIGN: Five cases were systematically studied by the authors. The cases in the literature were identified through Medline searches for Susac syndrome; microangiopathy of the brain, retina, or ear; and cross-referencing the indexes of each retrieved article. PARTICIPANTS: The number of new patients studied in this report was five. An additional 41 patients were culled from the literature. INTERVENTION: Patients were treated with corticosteroids, antineoplastic agents, and other methods in a noncontrolled, nonrandomized fashion. MAIN OUTCOME MEASURES: With respect to therapeutic intervention, the main clinical outcome measures were return of vision, improvement of neurologic and psychiatric manifestations, and recovery of auditory function. Alterations of abnormalities observed by cranial magnetic resonance imaging also were monitored. RESULTS: Of 46 identified patients, 39 were women. The mean age of the patients was 30 years. Forty-one patients (89 per cent) had arterial occlusions, which were bilateral in 60 per cent. Thirty-one patients (67 per cent) reported hearing loss. Twenty patients (44 per cent) had a global encephalopathy, but other neurologic manifestations were common. The mean duration of the illness was 46.7 months. CONCLUSION: This rare syndrome is more common than previously thought, has a strong female preponderance, and often can be identified at an early stage with a careful history and physical examination. Magnetic resonance imaging of the brain often shows lesions suggestive of multiple sclerosis. Fluorescein angiography may show arteriolar wall hyperfluorescence. Early treatment with corticosteroids often is, although not invariably, associated with a good prognosis. The disease appears to be self-limited in most patients. Author.

Assessment of adenoidal obstruction in children: clinical signs versus roentgenographic findings. Paradise, J. L., Bernard, B. S., Colborn, D. K., Janosky, J. E. Department of Pediatrics, University of Pittsburgh School of Medicine, Pennsylvania, USA. *Pediatrics* (1998) June, Vol. 101 (6), pp. 979–86.
OBJECTIVE: As part of a comprehensive study of indications for tonsillectomy and adenoidectomy, we investigated the reliability of standardized clinical assessments and standardized roentgenographic assessments of adenoidal obstruction of the nasopharynx, and the degree of correlation between clinical assessments and roentgenographic assessments. METHODS: We rated the degree of patients' mouth breathing and patients' speech hyponasality on a four-point scale (none = one; mild = two; moderate = three; marked = four), we averaged the ratings for each child to obtain a Nasal Obstruction Index, and we determined levels of interobserver agreement concerning the ratings. We classified lateral soft-

tissue roentgenograms of the nasopharynx, based on assessments of adenoid size and of nasopharyngeal airway patency, as showing either no obstruction, borderline obstruction, or obstruction, and we determined levels of inter- and intraobserver agreement concerning the classifications. Finally, we determined correlations in individual patients between clinical ratings and roentgenographic ratings of nasal/nasopharyngeal obstruction, and calculated the predictive values of clinical ratings based on roentgenographic ratings as the gold standard. RESULTS: In sets of paired examinations, weighted kappa values for interobserver agreement concerning mouth breathing (total, 235 children) and speech hyponasality (total, 648 children) ranged from 0.84 to 0.91. The value for interobserver agreement concerning roentgenographic assessment of nasopharyngeal airway status (207 children) was 0.92, and for intraobserver agreement (191 children) 0.88. The Kendall's tau b value for concordance between Nasal Obstruction Index values and roentgenographic ratings (1033 children) was 0.51. Nasal Obstruction Index values at the lower and upper extremes – i.e., 1.0 and > or = 3.5, respectively – were highly predictive of concordant roentgenographic ratings. CONCLUSIONS: We conclude that standardized clinical ratings of the degree of children's mouth breathing and speech hyponasality provide reliable and reasonably valid assessments of the presence and degree of adenoidal obstruction of the nasopharyngeal airway. These clinical assessments are particularly valid at the extremes of either marked obstruction or no obstruction. Clinical assessment alone may be insufficient to establish the presence of adenoidal obstruction, but clinical assessment alone when findings are unequivocally negative can suffice to rule out adenoidal obstruction with a high degree of confidence. Author.

Familial laryngeal paralysis. Manaligod, J. M., Smith, R. J. University of Kentucky Chandler Medical Center, Lexington 40536, USA. *American Journal of Medical Genetics* (1998) May 26, Vol. 77 (4), pp. 277–80.
Vocal fold paralysis (VFP) is the second most frequent cause of congenital stridor. Although often due to birth trauma, infection, and brainstem abnormalities, most cases are idiopathic. Infrequently a family history of VFP is elicited, identifying a role for genetic factors in laryngeal function. This study describes a family in which an autosomal dominant form of familial laryngeal abductor paralysis segregates. The typical physical findings, diagnostic and therapeutic considerations, and possible molecular mechanisms of this disorder are discussed in detail. Author.

Do GPs have the techniques for 'watchful waiting' in glue ear? Bennett, K., Higson, J., Haggard, M. Medical Research Council Institute of Hearing Research, University Park, Nottingham. *British Journal of Genetic Practice* (1998) March, Vol. 48 (428), pp. 1079–80.
'Watchful waiting' for glue ear in children within primary care as a precursor or alternative to surgery is one of the increasing pressures on general practitioners (GPs) to limit outpatient referrals. An equipment survey questions whether primary care is properly equipped to 'watch', given the limited access to audiological equipment that might objectively underpin a decision on when 'waiting' should end. Author.

Intra-articular injection of hyaluronic acid reduces total amounts of leukotriene C4, 6-keto-prostaglandin F1alpha, prostaglandin F2alpha and interleukin-1beta in synovial fluid of patients with internal derangement in disorders of the temporomandibular joint. Hirota, W. Department of Dentistry and Oral Surgery, Hirosaki University School of Medicine, Japan. *British Journal of Oral and Maxillofacial Surgery* (1998), February, Vol. 36 (1), pp. 35–8.
This prospective randomized study was designed to assess the effect of an intra-articular injection of sodium hyarulonate on internal derangement in disorders of the temporomandibular joint. Fifteen patients (four men, 11 women, mean (SEM) age 33(3) years) with unilateral internal derangement of the temporomandibular joint without radiographic evidence of the condylar degeneration who were randomly allocated to have arachidonic acid metabolites (n = 9) or cytokines (n = 6) measured in synovial fluid. The preauricular area was disinfected and anaesthetized locally with one per cent lignocaine hydrochloride. Synovial fluid was collected by rinsing the joint with saline 5 ml. Sodium hyaluronate 1 ml (10 mg) was then injected into the superior compartment of the temporomandibular joint. The treatment was repeated after two weeks. The effects of sodium hyaluronate on total amounts of arachidonic acid metabolites and cytokines and on symptoms was measured. Injection of sodium hyaluronate caused significant reductions in the mean (SEM) of total amounts of leukotriene C4 (4.68 (2.27) to 0.48 (0.24) ng/joint), 6-keto-prostaglandin F1alpha (12.12 (2.78) to 5.19 (1.90) ng/joint), prostaglandin F2alpha (12.63 (5.51) to 4.21 (2.20) ng/joint), and interleukin-1beta (100.5 (14.2) to 50.8 (13.9) pg/joint), respectively ($p<0.05$ in each case). The mean (SEM) pain score was significantly reduced from 2.56 (0.18) to 0.89 (0.26 ($p<0.01$), the noise score from 2.18 (0.23) to 1.18 (0.18) ($p<0.05$), and degree of mouth opening from 28.2 (2.5) to 34.9 (2.0) mm ($p<0.01$). However, no improvement in symptoms was recorded in one of nine, five of 11, and one of nine patients, respectively. These findings suggest that inflammation plays a part in internal derangement of the temporomandibular joint, and injection of an anti-inflammatory substance may be beneficial to such patients. Author.

An audit of oral and dental health regimens practised in the management of oropharyngeal cancer. Nicholls, C., Ilankovan, V. Charminster House Dental Practice, Bournemouth, Dorset, UK. *British Journal of Oral and Maxillofacial Surgery* (1998) February, Vol. 36 (1), pp. 63–6.
The purpose of the present study was to find out what preventive care was offered to patients after radiotherapy, particularly if they were dentate. As the mean age of the population increases and the number of people who retain at least some of their teeth into old age also rises, it is likely that more and more people with a diagnosis of oral cancer will be dentate. The incidence of oropharyngeal cancer has also started to increase recently and is affecting more young and dentate people. It is of paramount importance to provide comprehensive management for these patients, not only to remove the disease and reconstruct the defect, but also provide the patient with the opportunity of experiencing a good quality of life by having a comfortable mouth after treatment. A questionnaire was sent to all senior fellows of the British Association of Oral and Maxillofacial Surgeons (BAOMS) and the results analysed. The results of this survey show that improvements could be made if some simple preventive measures were instigated in the early stages of treatment. Author.

Glucose 6-phosphate dehydrogenase deficiency with kernicterus: progressive late recovery from profound deafness. Akhtar, S., Drenovak, M., Bantock, H., Mackinnon, H., Graham, J. Royal National Throat Nose and Ear Hospital, London, UK. *International Journal of Pediatric & Otorhinolaryngology* (1998), March 1, Vol. 43 (2), pp. 129–40.
In this case report a near-term infant with Glucose 6-Phosphate Dehydrogenase (G6-PD) deficiency had an unconjugated bilirubin level of 703 on the 11th day of life but maintained his haemoglobin levels above 11 gm/dl. At four months of age he demonstrated the clinical picture of Kernicterus; profound sensorineural deafness and evidence of encephalopathy. However, by 15 months of age his abnormal cerebral and motor signs had regressed to a near-normal level in parallel with a gradual improvement in hearing, which also reached normal levels, first in the right ear, then in the left. At this age residual mental retardation has not been excluded but his communication skills, though delayed by four to six months, were moving towards the level when they would be appropriate for his age. Author.

Sinusitis-associated epidural abscess presenting as posterior scalp abscess – a case report. Durand, B., Poje, C., Dias, M. Department of Otolaryngology, State University of New York at Buffalo, USA. *International Journal of Pediatric Otorhinolaryngology* (1998) March 1, Vol. 43 (2), pp. 147–51.
Complications of paranasal sinusitis constitute true surgical and medical emergencies. These complications appear to be more prevalent and seem to present in a more fulminant manner in the pediatric age group. The most common complication of paranasal sinusitis is orbital cellulitis followed collectively by all the intracranial complications. These include meningitis, subdural empyema, intracerebral abscess, epidural abscess and rarely cavernous or superior sagittal sinus thrombosis. We report the case of a seven-year-old boy who presented with posterior scalp cellulitis and abscess as a complication of minimally symptomatic

paranasal sinusitis. A combined neurosurgical and otolaryngologic approach was required to treat a unilateral ethmoid and frontal sinusitis associated with an epidural abscess abutting the length of the superior sagittal sinus and a posterior subgaleal abscess. The pertinent anatomy allowing for the development of this disease process is discussed. The danger of neurologic sequellae resulting from thrombosis of the superior sagittal sinus is emphasized. Aggressive treatment utilizing a multi-disciplinary surgical approach as well as broad spectrum antibiotics is paramount to obtain the best chance for a full recovery. Author.

ABR and temporal bone pathology in Hurler's disease. Komura, Y., Kaga, K., Ogawa, Y., Yamaguchi, Y., Tsuzuku, T., Suzuki, J. I. Department of Otolaryngology, Musashino Red Cross Hospital, Tokyo, Japan. *International Journal of Pediatric Otorhinolaryngology* (1998) March 1, Vol. 43 (2), pp. 179–88.
This is believed to be the first report on estimating hearing loss in Hurler's disease, based on the correlation between ABR and temporal bone pathology. ABR findings revealed hearing loss to be about 70 dB or more as result of peripheral mixed impairment. A histological study of the temporal bones revealed almost all pathological findings in the conductive system, except for the hyperplastic arachnoid in the internal auditory canal. In the middle ear cavity, otitis media, residual mesenchyme and deformity of ossicles were found. We explain the conductive component to be due to otitis media and poor ossicular connection. However, the etiology of the sensorineural component remains speculative. In Hurler's disease, hearing loss with mental retardation is often found at infantile age. Therefore, assessing the extent of hearing loss exactly was difficult, for example, the severity, the etiology and incidence of sensorineural impairment. We emphasize the need for not only well-described pathological studies but also for more objective functional investigations, at least ABR. Author.

Granulocyte macrophage-colony-stimulating factor mouthwashes heal oral ulcers during head and neck radiotherapy. Rovirosa, A., Ferre, J., Biete, A. Radiation Oncology Department, Hospital Clinic I Universitari of Barcelona, Spain. *International Journal of Radiation Oncology, Biology and Phyics* (1998) July 1, Vol. 41 (4), pp. 747–54.
PURPOSE: To evaluate the effectiveness of granulocyte macrophage-colony-stimulating factor GM-CSF mouthwashes in the epithelization of radiation-induced oral mucosal ulceration, control of pain, and weight loss. METHODS AND MATERIALS: Twelve patients received curative radiotherapy for head and neck carcinoma. All had oropharyngeal and/or oral mucosa irradiation, with a median dose of 72 Gy (range 50–74), with conventional fractionation. A total of 300 microg of GM-CSF in 250 cc of water for one hour of mouthwashing was prescribed. The procedure started once oral ulceration in the irradiation field was detected. Patients, examined twice a week, were evaluated for oral ulceration, pain, and weight loss. Blood tests were taken weekly during GM-CSF administration. A comparison was carried out with 12 retrospective case-matched controls. RESULTS: In the GM-CSF group, mucosa ulcerations healed in nine of 12 (75 per cent) of the patients during the course of the radiotherapy. Fifty per cent of the patients said they felt less pain during the GM-CSF treatment; 30 per cent needed morphine. The mean and median weight loss as a percentage of baseline weight in addition to the actual weight were 4.2 per cent and three per cent, respectively (variation ranged between a gain of one per cent and a loss of 13 per cent). No GM-CSF-related side effects were found. In the case control group, in the 12 cases, oral ulcerations increased during radiotherapy and two patients needed intubation intake and hospital admission, as opposed to the GM-CSF group. The mean and median percentage of weight loss were 5.8 per cent and five per cent, respectively. Sixty per cent of patients needed morphine, as opposed to 30 per cent in the GM-CSF group. CONCLUSIONS: Granulocyte macrophage-colony-stimulating factor was effective in curing mucosal ulcerations during the course of radiotherapy. This is the first time we have seen a drug with this capacity. Although the GM-CSF seems to be effective in the control of pain, oral intake, and weight loss, we need further studies with a greater number of patients to confirm our premise. Double-blind trials are necessary for future research into the control of pain and weight loss. Author.

Acoustic, aerodynamic, physiologic, and perceptual properties of modal and vocal fry registers. Blomgren, M., Chen, Y., Ng, M. L., Gilbert, H. R. Department of Communication Sciences, University of Connecticut, Storrs 06269-1085, USA. *Journal of the Acoustical Society of America* (1998) May, Vol. 103 (5 Pt 1), pp. 2649–58.
The purpose of the study was to examine the acoustic, aerodynamic, physiologic, and perceptual characteristics of modal and vocal fry production. Twenty normal speakers (10 males, 10 females) participated in the study. Speech material included four sustained vowels (/i/, /a/, /ae/, /u/), and syllable strings of /pi/ repetitions produced in both modal and vocal fry registers. Acoustic data (fundamental frequency, jitter, shimmer, and signal-to-noise ratio), aerodynamic data (airflow and air pressure), and electroglottographic (EGG) data were obtained simultaneously. Results demonstrated considerable differences across voice parameters for the modal and vocal fry registers. Fundamental frequency was significantly lower in vocal fry than in modal register for both males and females, however, significant gender differences existed only in modal register. For both males and females, measurements of jitter and shimmer were significantly higher and signal to noise ratio was significantly lower in vocal fry. In addition, airflow rate in modal register was almost three times as high as the airflow rate in vocal fry register during sustained vowel production. During syllable string production, subglottal air pressure values in modal register were approximately 1.5 times higher than that in the vocal fry register. In general, these data emphasize that the aeromechnical mechanisms of vocal fold vibratory behaviour are substantially different between modal and vocal fry registers. A model of vocal fry phonation is presented to account for the present results. Author.

Asymmetric otolith vestibulo-ocular responses in children with idiopathic scoliosis. Wiener-Vacher, S. R., Mazda, K. Otorhinolaryngology Department, Hopital Robert Debre, Paris, France. *Journal of Pediatrics* (1998) June, Vol. 132 (6), pp. 1028–32.
OBJECTIVE: A suggested cause of idiopathic scoliosis (IS) in children is a disequilibrium in the vestibulospinal control of trunk muscles. We sought a correlation between otolith vestibular dysfunction and IS. METHODS: A recently developed test for evaluation of otolith vestibular function (off-vertical axis rotation, OVAR) was applied to 30 children with IS, 12 control subjects, and three with congenital scoliosis as a result of spinal deformities. RESULTS: Of the patients with IS, 67 per cent had significantly greater values of directional preponderance on the OVAR test (a measure of otolith system imbalance) compared with control subjects. Patients with congenital scoliosis showed normal responses on the OVAR test. No correlation was found between the direction of the preponderance and the side of the spine imbalance, or between the directional preponderance and the curve magnitude. The rate of progression of the scoliosis was not significantly correlated with the amplitude of the directional preponderance. CONCLUSION: These results support the hypothesis that central otolith vestibular system disorders lead to a vestibulospinal system imbalance, and may be a factor in the cause of IS. Author.