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Abstract Selection

Subclinical neurotoxicity of mercury vapor revealed by a multimodality evoked potential study of chloralkali workers. Chang, Y. C., Yeh, C. Y., Wang, J. D. Department of Neurology, National Taiwan University Hospital, Republic of China. *American Journal of Industrial Medicine* (1995) February, Vol. 27 (2), pp. 271–9.
Pattern visual, brainstem auditory, and somatosensory evoked potential (EP) studies were performed on 26 chloralkali workers. The intensity of mercury vapor exposure in these workers was estimated from the individual working history. Mercury levels in blood, urine, and hair were determined with atomic absorption spectrometry. The EP findings were compared with those from individually matched normal subjects. In brainstem auditory and somatosensory EP studies, prolonged neural conduction times in the central nervous system (CNS) were found in workers exposed to mercury vapor. In the pattern visual EP study, mercury workers had higher interpeak amplitudes. Findings of this study suggested that chronic exposure to mercury vapor would affect the CNS functions. A multimodality EP study is a useful adjunct in evaluation of chronic mercury neurotoxicity, especially in an epidemiological study. Author.

Neurofibromatosis 2 (NF2): clinical characteristics of 63 affected individuals and clinical evidence for heterogeneity. Parry, D. M., Eldridge, R., Kaiser-Kupfer, M. I., Bouzas, E. A., Pikus, A., Patronas, N. Clinical Epidemiology Branch, National Cancer Institute, Bethesda, Maryland 20892. *American Journal of Medical Genetics* (1994) October 1, Vol. 52 (4), pp. 450–61.
To determine the spectrum of manifestations in neurofibromatosis 2 (NF2) and to assess possible heterogeneity, we evaluated 63 affected individuals from 32 families. Work-up included skin and neurologic examinations, audiometry, a complete ophthalmology examination with slit-lamp biomicroscopy of the lens and fundus, and gadolinium-enhanced MRI of the brain and, in some, of the spine. Mean age-at-onset in 58 individuals was 20.3 years; initial symptoms resulted from vestibular schwannomas (44.4 per cent), other CNS tumors (22.2 per cent), skin tumors (12.7 per cent), and ocular manifestations including cataracts and retinal hamartomas (12.7 per cent). Five asymptomatic individuals were diagnosed through screening. Vestibular schwannomas were documented in 62 individuals (98.4 per cent); other findings included cataracts (81 per cent), skin tumors (67.7 per cent), spinal tumors (67.4 per cent), and meningiomas (49.2 per cent). Usually, clinical manifestations and course were similar within families but differed among families. To assess possible heterogeneity, we assigned affected individuals to three proposed subtypes (representing mild, intermediate, and severe NF2) based on age-at -onset, presence or absence of CNS tumors other than vestibular schwannomas, and presence or absence of retinal hamartomas. Comparisons among the three subtypes for many clinical parameters demonstrated that patients in the mild subtype differed from those in the other two subtypes for most parameters, but that none of the parameters distinguished patients in the intermediate subtype from those in the severe subtype. Thus, there are likely two rather than three subtypes of NF2. Classification of patients to subtype may aid in counselling about long-term prognosis and in formulating individualized guidelines for medical surveillance. Author.

The importance of correct stage grouping in oncology. Results of a nationwide study of oropharyngeal carcinoma in The Netherlands. Hart, A. A., Mak-Kregar, S., Hilgers, F. J., Levendag, P. C., Manni, J. J., Spoelstra, H. A., Bruaset, I. A., van der Laan, B. F., Annyas, A. A., van der Beek, J. M., *et al.* Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands. *Cancer* (1995) June 1, Vol. 75 (11), pp. 2656–62.
BACKGROUND. In the frame of a nationwide study of oropharyngeal carcinoma in the Netherlands (1986-1990), the current International Union Against Cancer 1992/American Joint Committee on Cancer 1988 staging system was evaluated with respect to patient distribution and prognostic value. METHODS. Data related to epidemiology, treatment and survival from 640 patients referred for primary treatment were analyzed. Staging was first evaluated in a proportional-hazard regression analysis controlled for these data. Next, all possible combinations of T, N, and M were tested in a stepwise backward elimination model until all remaining indicator variables had a P value of less than 0.05. New stages were defined, based on the coefficients of the remaining indicator variables. RESULTS. The revised stages revealed two advantages compared with the UICC 1992/AJCC 1988 version: a more balanced distribution of patients (31 per cent in Stage I, 31 per cent in Stage II, 18 per cent in Stage III, 14 per cent in Stage IV, and five per cent unknown in the revised staging system versus seven per cent in Stage I, 17 per cent in Stage II, 24 per cent in Stage III, 50 per cent in Stage IV, and two per cent unknown in the UICC 1992/AJCC 1988 staging system), and an improved prognostic discrimination for the disease specific survival (five-year results in the revised staging were 67 per cent in Stage I, 42 per cent in Stage II, 28 per cent in Stage III, and 11 per cent in Stage IV, versus 68 per cent in Stage I, 64 per cent in Stage II, 44 per cent in Stage III and 27 per cent in Stage IV in UICC 1992/AJCC 1988). CONCLUSION. Improvements in the current staging system in patient distribution in the stages in prognostic discrimination is feasible by regrouping the T, N and M but without redefining the categories themselves. Author.

A double-blind, placebo-controlled trial of local nasal immunotherapy in allergic rhinitis to Parietaria pollen. D'Amato, G., Lobefalo, G., Liccardi, G., Cazzola, M. Department of Chest Diseases, Hospital A. Cardarelli Naples, Italy. *Clinical Experiments for Allergy* (1995) February, Vol. 25 (2), pp. 141–8.
We assessed the efficacy and safety of local nasal immunotherapy (LNIT) using an extract in macronized powder form of Parietaria pollen, a very important allergenic plant in the Mediterranean and other parts of the world. Twenty-six patients aged 13-37 years, with seasonal allergic rhinitis to this pollen, were enrolled in a double-blind placebo-controlled trial, carried out from autumn 1991 to the end of June 1992. They were selected on the basis of a positive skin-prick test, radioallergosorbent test (RAST) and intranasal challenge to Parietaria antigen. Patients were randomly divided into two groups of 13; the first group was given Parietaria antigen, and the second placebo. We recorded mean weekly symptom scores and drug consumption for 17 weeks during the pollen season in the year 1992, and specific serum-IgE and IgG levels. Three patients in the active group withdrew from the study because of bronchial symptoms. A significant difference was observed in mean weekly nasal symptom scores, in drug consumption and in specific nasal threshold to Parietaria allergenic extract in the treated and control groups. No difference was observed in serum IgE and IgG levels. Serum IgE levels rose significantly only in the control group after the pollen season. This study indicates that LNIT may be a useful alternative to traditional subcutaneous immunotherapy in patients with allergic rhinitis. Author.

Nasal cytokines in common cold and allergic rhinitis. Linden, M., Greiff, L., Andersson, M., Svensson, C., Akerlund, A., Bende, M., Andersson, E., Persson, C. G. Department of Lung Medicine, University Hospital, Lund, Sweden. *Clinical Experiments for Allergy* (1995) February, Vol. 25 (2), pp. 166–72.
Coronavirus-induced common cold and allergen-induced rhinitis are characterized by nasal mucosal exudation of bulk blood plasma. The mucosal exudation process involves 'flooding' of the lamina propria with plasma-derived binding proteins and it is possible that subepithelial inflammatory cytokines and mediators may be moved by the exudate to the mucosal surface. In this study, we have analyzed cytokine levels in nasal lavage (NAL) fluids from non-allergic subjects inoculated with coronavirus (n = 20) and from subjects with allergic (birch pollen) rhinitis subjected to

additional allergen challenge (samples were obtained 35 min post challenge) in the laboratory (n = 10). Ten of the 20 inoculated subjects developed common cold and 10 remained healthy. Interferon-gamma (IFN gamma), interleukin-1 beta (IL-1 beta), granulocyte-macrophage colony-stimulating factor (GM-CSF), IL-4, and IL-6 were analysed in unprocessed NAL fluids using immunoassays. The subjects who developed common cold had increased NAL fluid levels of IFN gamma ($P<0.05$) that correlated well with the symptoms ($P<0.001$). IFN gamma did not increase in subjects with allergic rhinitis. IL-1 beta levels were similar in NAL fluids obtained from all inoculated subjects. In the subjects with allergic rhinitis NAL fluid levels of both IL-1 beta and GM-CSF were increased ($P<0.05$). GM-CSF was not detected in common cold. IL-4 and IL-6 were not detectable in any of the NAL fluids. The present cytokines may not only emanate from superficial mucosal cells. By aiding plasma exudation subepithelial cytokines may potentially also be retrieved on the mucosal surface. Author.

Reconstruction of midfacial defects after surgical resection of malignancies. Wells, M. D., Luce, E. A. Department of Surgery, University of Kentucky Chandler Medical Center, Lexington, USA. *Clinical Plastic Surgery* (1995) January, Vol. 22 (1), pp. 79–89.
Midfacial and orbital defects after ablative oncologic surgery are difficult problems for the reconstructive surgeon. Our goal is to address the devastating functional and aesthetic consequences of these extirpations and to improve the quality of life for this unfortunate group of patients. Partial maxillectomy defects are best treated by skin grafting the residual cavity and reconstructing the maxillary defect by prosthetic means. Local tissues can be used when the defects are small and the bone loss is not extensive. For massive midfacial defects with insufficient bony support for prosthetic reconstruction, osseocutaneous free flaps have proved useful to restore contour and the necessary structural support. Author.

Use of ipratropium bromide nasal spray in chronic treatment of nonallergic perennial rhinitis, alone and in combination with other perennial rhinitis medications. Grossman, J., Banov, C., Boggs, P., Bronsky, E. A., Dockhorn, R. J., Druce, H., Findlay, S. R., Georgitis, J. W., Hampel, F. C., Kaiser, H., *et al. Journal of Allergy and Clinical Immunology* (1995) May, Vol. 95 (5 Pt 2), pp. 1123–7.
To study the long-term safety and effectiveness of ipratropium bromide nasal spray 0.03 per cent in the treatment of nonallergic perennial rhinitis, we administered this medication for one year in an open-label trial involving 285 patients. Our intention was to maintain the highest protocol dose possible to gain a clearer picture of the long-term side effect profile of the compound. Ipratropium bromide was well tolerated with no serious side effects in this patient population. It provided a significant improvement in rhinorrhea throughout the year-long trial; only 17 of 285 patients (six per cent) were considered treatment failures. There was an improvement in patient quality of life, as well as a substantial reduction in the need for other medications (antihistamines, decongestants, and nasal steroids) used to treat perennial rhinitis symptoms. Author.

The differential diagnosis of rhinorrhea. Knight, A. Division of Clinical Immunology, Sunnybrook Health Science Centre, North York Ontario, Canada. *Journal of Allergy and Clinical Immunology* (1995) May, Vol. 95 (5 Pt 2), pp. 1080–3.
Rhinorrhea disrupts the quality of life of a large segment of the population. The first step to treating it properly is to make an accurate diagnosis of its underlying cause. This is not always a simple proposition, however, because rhinorrhea has many causes that can easily be confused in clinical practice. Diagnosis has come to rely increasingly on testing, but test costs add significantly to the health-care burden. This article reviews the use of medical logic in the differential diagnosis of rhinorrhea and describes the relative usefulness of various testing methods. Author.

A clinical trial of ipratropium bromide nasal spray in patients with perennial nonallergic rhinitis. Bronsky, E. A., Druce, H., Findlay, S. R., Hampel, F. C., Kaiser, H., Ratner, P., Valentine, M. D., Wood, C. C. *Journal of Clinical Immunology* (1995) May, Vol. 95 (5 Pt 2), pp. 1117–22.
Intranasal ipratropium bromide has been shown to significantly reduce rhinorrhea. Use of a freon-propelled intranasal preparation has resulted in side effects associated with the drying properties of the propellant. The purpose of the present trial was to study the safety and efficacy of a new isotonic aqueous ipratropium bromide nasal spray pump, specifically in patients with perennial nonallergic rhinitis. Two hundred thirty-three patients participated in an eight-week double-blind parallel comparison of ipratropium bromide nasal spray with its vehicle, a saline solution. Treatment with the ipratropium spray resulted in a 30 per cent reduction in rhinorrhea; this reduction was significantly greater than that seen with the saline vehicle. There was a modest reduction in postnasal drip, sneezing, and congestion with both treatments, which may be attributable to the salutary effects of the saline solution. Patients also perceived a significant reduction in the degree to which rhinorrhea interfered with their daily activities and moods. Treatment was well tolerated, with no drug-related systemic adverse events and no evidence of nasal rebound on discontinuation of treatment. Minor, infrequent episodes of nasal dryness and epistaxis were the only significant adverse events reported; these did not limit treatment. Author.

Twenty-four hour pattern in symptom intensity of viral and allergic rhinitis: treatment implications. Smolensky, M. H., Reinberg, A., Labrecque, G. Hermann Chronobiology Center and Environmental Sciences, University of Texas-Houston School of Public Health 77025, USA. *Journal of Allergy and Clinical Immunology* (1995) May, Vol. 95 (5 Pt 2), pp. 1084–96.
The symptoms of rhinorrhea secondary to influenza and cold virus or seasonal and perennial allergic rhinitis are circadian rhythmic. Cough frequency and handkerchief use by persons suffering from virus-induced rhinorrhea are more prominent during the daytime, especially during the initial hours after awakening from nocturnal sleep. The elevation in sublingual temperature as well as the decrement in mental alertness associated with influenza in particular are more profound at this time. Sneezing, blocked nose, and runny nose secondary to allergic rhinitis are also greater in intensity during the morning in approximately 70 per cent of sufferers. The day-night variation in symptom intensity amounts to approximately 20 per cent of the 24-hour mean level. The treatment of these diseases and their symptoms has traditionally involved equal-interval, equal-dose (homeostatic) medication schedules. The effects of antihistamine and anti-inflammatory medicines may be enhanced by timing them to the day-night temporal pattern in symptom manifestation and intensity to achieve an optimization of their beneficial effects with control of toxicity, that is, as a chronotherapy. Author.

Bacteriologic failure of amoxicillin-clavulanate in treatment of acute otitis media caused by nontypeable Haemophilus influenzae. Patel, J. A., Reisner, B., Vizirinia, N., Owen, M., Chonmaitree, T., Howie, V. Department of Pediatrics, University of Texas Medical Branch, Galveston 77555-0371, USA. *Journal of Pediatrics* (1995) May, Vol. 126 (5 Pt 1), pp. 799–806
OBJECTIVE: To evaluate the rate of bacteriologic failure of amoxicillin-clavulanate in the treatment of acute otitis media (AOM) and to identify the risk factors associated with failure. METHODS: Ninety-nine subjects (mean age, 21.4 months) with AOM were treated with amoxicillin-clavulanate in two prospective study trials that compared efficacy of two experimental antibiotics with amoxicillin-clavulanate. Tympanocentesis for microbiologic studies was performed in all subjects at enrolment; at three to six days, during amoxicillin-clavulanate; and at other times when clinically indicated. The subjects were followed up for one month. Clinical, bacteriologic, and virologic characteristics of the subjects were analyzed. RESULTS: Bacteriologic failure of treatment occurred in none of 39 subjects (0 per cent) with Streptococcus pneumoniae, two of 25 (eight per cent) with Moraxella catarrhalis, and 11 of 29 (38 per cent) with nontypeable Haemophilus influenzae (NTHi) infection. The failure rate for NTHi was higher than that for other pathogens ($P = 0.0007$) and was increased when compared with the preceding study period ($P = 0.017$). Bacteriologic failure was also associated with clinical failure ($P = 0.041$). In subjects with AOM caused by NTHi the rates of adequate drug compliance were comparable in both success and failure groups. Antimicrobial susceptibility testing by minimum inhibitory concentration and minimum bactericidal concentration (MIC/MBC) assays showed that amoxicillin-clavulanate resistance was not significantly associated with bacteriologic failure of treatment. However, in two subjects, MIC/MBC of the

NTHi isolates during therapy were higher than MIC/MBC of the isolates before therapy; these strains of isolates pretherapy and during therapy were discordant as determined by outer membrane protein analysis. The bacteriologic failure rate was higher in non-white boys ($P = 0.026$) and in subjects with a history of three or more previous episodes of AOM ($P = 0.008$). Other factors such as age, bilaterality of disease, polymicrobial infection, and biotype pattern of NTHi were not associated with treatment failure. When children with adequate drug compliance were analyzed separately, only those with concomitant viral infection of the nasopharynx or middle ear were found to be at an increased risk of bacteriologic failure of treatment ($P = 0.04$). CONCLUSIONS: The bacteriologic failure rate of amoxicillin-clavulanate therapy for AOM caused by NTHi was higher in the current study period than in the preceding period. Factors contributing to treatment failure were race, gender, proneness to otitis, and concomitant viral infection. Author.

Nasal route for infant resuscitation by mothers. Tonkin, S. L., Davis, S. L., Gunn, T. R. New Zealand Cot Death Association, Auckland. *Lancet* (1995) May 27, Vol. 345 (8961), pp. 1353–4.
In infants under six months of age air normally enters the trachea by the nose because the tongue fills the oral cavity, and the oral route is open only when the infant is making muscular efforts such as crying or gasping. The present recommendation for infant resuscitation is for the resuscitator's mouth to cover the mouth and nose of the baby. We set out to test whether this recommendation is feasible. We measured the dimensions of the faces of 28 babies aged between two and four months (the age when resuscitation is most often needed) and of the mouths of 25 of their mothers. Only two mothers would have been able to cover with their mouths the nose and closed mouth of two babies (not their own). The mannequins often used to teach adults to resuscitate infants are misleading because they present a wide open mouth, thus implying that this is the preferred route. We recommend that the nasal route of air entry be taught to parents for resuscitation of babies who have stopped breathing. Author.

Carotid artery invasion by head and neck masses: prediction with MR imaging. Yousem, D. M., Hatabu, H., Hurst, R. W., Seigerman, H. M., Montone, K. T., Weinstein, G. S., Hayden, R. E., Goldberg, A. N., Bigelow, D. C., Kotapka, M. J. Department of Radiology, Hospital of the University of Pennsylvania, Philadelphia 19104, USA. *Radiology* (1995) June, Vol. 195 (3), pp. 715–20.
PURPOSE: To determine the value of magnetic resonance (MR) imaging in predicting resectability of head and neck neoplasms around the carotid arteries. MATERIALS AND METHODS: Forty-nine patients (28 male patients and 21 female patients aged 17-19 years; mean, 57.3 years) with head and neck masses and clinical evidence of carotid wall invasion underwent MR imaging. T1-weighted, T2-weighted and gadolinium-enhanced T1-weighted images were analyzed to determine circumferential involvement of 53 arteries by tumor. RESULTS: More than 270 degrees of circumferential involvement was considered suggestive of unresectability of the malignant neoplasm; 270 degrees or less was considered lack of invasion. The sensitivity of MR imaging for determination of unresectable disease was 100 per cent (12 of 12 cases), specificity was 88 per cent (36 of 41), and accuracy was 91 per cent (48 of 53). Accuracy was 100 per cent for squamous cell carcinoma (n = 29). CONCLUSION: Tumor that encompasses more than 270 degrees of the carotid artery probably cannot be removed from the artery. Tumor that involves 270 degrees or less of the artery can be removed. Author.

Syndromal frontonasal dysostosis in a child with a complex translocation involving chromosomes 3, 7 and 11. Stevens, C. A., Qumsiyeh, M. B. Department of Pediatrics, University of Tennessee, USA. *American Journal of Medical Genetics* (1995) February 13, Vol. 55 (4), pp. 494–7.
We report on a four-year-old boy with typical frontonasal dysostosis and an apparently balanced de novo translocation involving chromosomes 3, 7 and 11, and four breakpoints. The karyotype was 46, XY, t(7; 3) (3; 11) (7pter –>7q21.3::3q27–> 3qter; 3pter–>3 q23::11q21–>11qter; 11pter–>11q21::3q23–>3q27::7q21.3–>7 qter). In situ hybridization with a chromosome three painting probe confirmed the interpretation from GTG banding. The child had a widow's peak, marked hypertelorism, absence of the nasal tip, and widely separated nares. He also had an atrial septal defect, micropenis, small testes, clubfeet, scoliosis, block C2-4, and structural brain abnormalities on MRI. In review we found two other cases of frontonasal dysostosis with chromosome abnormalities, neither of which was similar to our case. The presence of a de novo (apparently) balanced translocation in our patient may help to locate the gene(s) for frontonasal dysplasia and perhaps other midline craniofacial malformations. Author.

Otoacoustic emissions as a screening test for hearing impairment in children. Richardson, M. P., Williamson, T. J., Lenton, S. W., Tarlow, M. J., Rudd, P. T. Bath Unit for Research into Paediatrics, Children's Centre, Royal United Hospital. *Archives of Diseases in Children* (1995) April, Vol. 72 (4), pp. 294–7
Transient evoked otoacoustic emissions (TEOAEs) are low amplitude sound waves produced by the healthy cochlea. They can be recorded with a microphone in the external ear. TEOAEs are abolished by hearing losses of 30 dB or more. The feasibility of using TEOAEs as a screening test for hearing loss in children was studied. TEOAE recordings were attempted in 56 children attending an audiology clinic. Recordings were possible from both ears in 52 children; of these 104 ears, 32 had hearing deficits of 30 dB or more. Hearing status was compared with the results of six TEOAE screening criteria. All criteria had a sensitivity of 1.00. Four standard TEOAE criteria yielded specificities of 0.46-0.58. Two new criteria derived from analysis of limited frequencies from the TEOAE waveform gave specificities of 0.76 and 0.82. It can be concluded that, when appropriate pass/fail criteria are employed, TEOAEs are a feasible screening test in children. Author.

Chemoprevention effects on bronchial squamous metaplasia by folate and vitamin B12 in heavy smokers. Saito, M., Kato, H., Tsuchida, T., Konaka, C. Department of Surgery, Tokyo Medical College, Japan. *Chest* (1994) August, Vol. 106 (2), pp. 496–9
The purpose of this study was to observe the effects of folate and vitamin B12 on bronchial squamous metaplasia with cellular atypia, known to be a precancerous change, in heavy smokers. Cases of squamous metaplasia were recognized on sputum cytologic study. The location of bronchial lesions was identified by bronchofiberoscopy in all cases. The grade of cellular atypia was evaluated on the basis of histologic specimens. Thirty-eight patients with squamous metaplasia, including 21 patients receiving folate and vitamin B12 and 17 patients without any medication, were investigated prospectively for one year. Consecutive bronchofiberoscopic examinations were performed in each patient in three to four months after the first examination in order to evaluate the lesions. Grades of cellular atypia were examined by histologic specimens using a scoring system from nought to three. There was no significant difference in mean scores at entry in the medication group (1.7) and control group (1.4). The medication group showed significant decrease in mean scores (0.4) while the control group had no change in mean scores (1.2) at termination. Plasma levels in the medication group were significantly increased at termination of the study while those of the control group showed a slight decrease. The results show that the cellular atypia squamous metaplasia in heavy smokers can be reduced by administration of folate and vitamin B12. Author.

Abnormal movement of the arytenoid region during exercise presenting as exercise-induced asthma in an adolescent athlete. Bittleman, D. B., Smith, R. J., Weiler, J. M. Department of Internal Medicine, University of Iowa, Iowa City, USA. *Chest* (1994) August, Vol. 106 (2), pp. 615–6.
A 16-year-old female basketball player presented with a 21/2 year history of exercise-induced severe dyspnea, stridor, and mild wheezing that did not respond to prophylactic treatment with beta-agonists and cromolyn. Spirometric data at rest were normal, but flow-volume loops during exercise suggested a variable extrathoracic obstruction. Laryngoscopic evaluation while the patient was riding an exercise bicycle demonstrated an abnormal motion of the arytenoid region causing obstruction of the airway during inspiration. The vocal cords moved normally. This patient demonstrates the capacity of supraglottic tissue to obstruct the airway during exercise as a cause for exercise-induced dyspnea and stridor. Patients with this disorder may be misdiagnosed as having exercise-induced asthma. Author.

Serial somatosensory and brainstem auditory evoked potentials in monitoring of acute supratemporial mass lesions. Krieger, D., Jauss, M., Schwarz, S., Hacke, W. Department of Neurology, University of Heidelberg, FRG. *Critical Care Medicine* (1995) June, Vol. 23 (6), pp. 1123–31.
OBJECTIVE: To determine the relevance of serial evoked potentials (brainstem auditory evoked potentials and somatosensory evoked potentials) and clinical parameters (pupillary response and intracranial pressure) in patients with acute supratentorial mass lesions. DESIGN: Prospective case series of comatose patients with acute supratentorial mass lesions. SETTING: Neurocritical care unit of a tertiary care center. PATIENTS: Thirty consecutive patients with the following study inclusion criteria: a) clinical and computed tomography evidence of an acute supratentorial mass lesion; b) implantation of an intracranial pressure monitoring device; and c) a persistent comatose state during the observation period. INTERVENTIONS: Brainstem auditory evoked potentials, somatosensory evoked potentials, intracranial pressure, and pupillary responses were recorded at the time of three particular events: a) immediately after implantation of an epidural intracranial pressure monitoring device; b) during intracranial pressure therapy; and c) at termination of intracranial pressure therapy. Evoked potential results were ranked into three categories: a) normal on both sides; b) abnormal or absent on one side; and c) evoked potentials on boths sides abnormal or absent. Spearman's rank correlation was performed to analyze serial recordings. Cross tables were generated to determine the prognostic value of evoked potentials and clinical parameters. Fisher's exact test was applied to calculate statistical significance. MEAUREMENTS AND MAIN RESULTS: Intracranial pressure values correlated with pupillary responses and brainstem auditory evoked potentials during and at the termination of intracranial pressure therapy. Pupillary findings correlated with brainstem auditory evoked potentials only at the time of termination of intracranial pressure therapy. There was no relation between somatosensory evoked potentials and clinical parameters. Pupillary responses indicated a good or poor recovery during and at the termination of intracranial pressure therapy. Brainstem auditory evoked potentials and intracranial pressure values distinguished between good and poor outcome only at termination of intracranial pressure therapy. Somatosensory evoked potential results did not predict outcome. CONCLUSIONS: Shortly after manifestation of supratentorial mass lesions, the results of evoked potentials and clinical parameters indicate increased intracranial pressure and incipient transtentorial herniation but do not predict sequelae. Our results indicate that after institution of effective therapy, pupillary abnormalities and brainstem auditory evoked potentials serve as valuable prognostic predictors. In contrast, somatosensory evoked potentials reflect neither therapeutic efficacy nor outcome in our patient population. Author.

The mismatch negativity in cochlear implant users. Ponton, C. W., Don, M. Electrophysiology Laboratory, House Ear Institute, Los Angeles, California, USA. *Ear and Hearing* (1995) February, Vol. 16 (1), pp. 131–46.
For individuals with severe or profound hearing loss, electrical stimulation of surviving neural elements by a cochlear implant may partly restore a sensation of hearing. Determining the extent of restoration based on behavioral measures may be difficult, particularly when evaluating young children or individuals who have little or no experience with normal hearing. In normal-hearing individuals, an objective measure of sound discrimination may be obtained by studying the mismatch negativity (MMN) component of the auditory evoked potential. The MMN may be evoked by a number of physical differences in acoustic stimuli including duration and pitch. For cochlear implant users, analogous stimulus differences may be produced by changing the length of a stimulus pulse train or by changing the pair of activated electrodes along a multi-electrode implant array. This paper will provide an overview of our current results, comparing evoked response data recorded from both normal-hearing individuals and cochlear implant users. In both normal-hearing individuals and cochlear implant users, MMNs were evoked by differences in stimulus train duration and pitch (or electrode pair activation in cochlear implant users). These findings suggest that the MMN may be a useful method for assessing the discriminability of electrical stimulation patterns produced by a cochlear implant. Eventually, information gained by MMN testing may yield important information fordeveloping rehabilitation programs for the individual user. Author.

Shape and displacement patterns of the gerbil tympanic membrane in experimental otitis media with effusion. von Unge, M., Decraemer, W. F., Dirckx J. J., Bagger-Sjoback, D. Department of Otorhinolaryngology, Karolinska Sjukhuset, Stockholm, Sweden. *Hearing and Results* (1995) February, Vol. 82 (2), pp. 184–96.
This study assesses the visco-elastic properties of the tympanic membrane (TM) in isolated gerbilline temporal bones as a function of time after inducing experimental otitis media with effusion (OME). To do this we measured the TM displacements produced by application of sequences of static pressures across the TM, with a high resolution, real-time, differential moire interferometer, and the results were compared with measurements on healthy ears. Two methods of producing OME were used: in one group tubal plugging was performed to produce mild OME (the 'TP group'); in the other group electro-cauterization of the nasopharyngeal orifice of the Eustachian tube was used to cause a severe form of OME (the 'EC group'). The measurements were performed from one day up to 10 weeks after surgery. In the TP group the displacement fringe patterns were normal, i.e. qualitatively they resembled the patterns of the control group. Quantitatively there was a significant decrease of displacement for a given pressure on the first day after surgery, followed by a trend of increase with time; after seven to 10 days the displacement was larger than in the control group. In the EC group the displacement was significantly reduced after half a week, followed by a trend of increase with time, similar to what was found in the TP group; at one week the displacement was larger than in the control group, and at 10 weeks the largest displacement was recorded. In the EC group the displacement patterns were often irregular ; in some cases with changes suggesting the presence of weak spots in the TM where retraction pockets most likely could develop. OME seems to affect the stiffness of the TM promptly so that it is a potential parameter for early diagnosis. The stiffness changes may, if measurable in the clinical situation, become prognostic parameters in the treatment of OME. Author.

Eleven novel mutations in the NF2 tumor suppressor gene. Bourn, D., Evans, G., Mason, S., Tekes, S., Trueman, L., Strachan, T. Department of Human Genetics, University of Newcastle upon Tyne, UK. *Human Genetics* (1995) May, Vol. 95 (5), pp. 572–4
Eleven novel mutations were identified in the NF2 tumor suppressor gene in a panel of British NF2 patients. Screening was performed using a combination of heteroduplex and single-strand conformation polymorphism analysis on polymerase chain reaction amplified material. Author.

Successful treatment of a squamous papilloma of the hypopharynx-esophagus by local injections of (S)-1-(3-hydroxy-2-phosphonylmethoxypropyl)cytosine. Van Cutsem, E., Snoeck, R., Van Ranst, M., Fiten, P., Opdenakker, G., Geboes, K., Janssens, J., Rutgeerts, P., Vantrappen, G., de Clercq, E., *et al.* Department of Gastroenterology, Katholieke Universiteit Leuven, Belgium. *Journal of Medical Virology* (1995) February, Vol. 45 (2), pp. 230–5.
Human papillomaviruses (HPV) are associated with benign lesions and show specificity towards the location or tissues that they infect. HPVs are responsible for warts. Among more than 60 different HPV types known to occur in humans, a strong association has been found between types 16 and 18 and cervical cancer, and such an association is also suspected for types 31, 33, 35, 45, 51, 52 and 56. We describe the effects of (S)-1-(3-hydroxy-2-phosphonyl-methoxypropyl) cytosine (HPMPC), following local intratumoral injection, in a 69-year-old woman with hypopharyngeal and esophageal papillomatous lesions, polymerase chain reaction (PCR) positive for HPV types 16 and 18, that relapsed after surgery and that also failed to respond to Nd-Yag laser photocoagulation and alpha-interferon treatment (6 x 10(6) U five times a week for four weeks followed by three times a week for two months). HPMPC was given at 1.25 mg/kg, with a sclerosing needle, through the biopsy channel of a video-endoscope, directly into the tumor, from March until July 1993 at seven different occasions. The first four injections were given at an interval of one week at the level of the hypopharynx. The next three injections

were given at an interval of three to five weeks. During the fourth to the seventh session, half of the dose was injected into the hypopharyngeal and the other half into the esophageal tumor. Three further injections of HPMPC were administered at the level of the esophageal tumor in September 1993 with two-week intervals. After HPMPC treatment, the lesions became smaller and flat until they completely disappeared. Author.

Microsurgical anatomy around the foramen of Luschka in relation to intraoperative recording of auditory evoked potentials from the cochlear nuclei. Kuroki, A., Moller, A. R. Department of Neurological Surgery, University of Pittsburgh School of Medicine, Pennsylvania, USA. *Journal of Neurosurgery* (1995) June, Vol. 82 (6), pp. 933–9.
Three cadaveric heads were dissected to investigate the microsurgical anatomy around the foramen of Luschka. It was found possible to place a recording electrode in proximity to the cochlear nuclei by inserting it in the lateral recess of the fourth ventricle through the foramen of Luschka. In operations of the cerebellopontine angle using the retromastoid approach, access to the foramen of Luschka and the lateral recess is obtained by retracting the biventral lobule of the cerebellum in a caudal-rostral direction under a caudal-rostral/medial field of vision. The craniectomy might need to be enlarged a few millimeters in the causal direction. A wick electrode can be inserted in the lateral recess beneath the choroid plexus in a rostromedial direction and to a depth of approximately 3 to 5 mm from the foramen of Luschka without excessive retraction of the cerebellum. The optimum position for the recording electrode is in the triangle formed by the axis of the cochlear nerve and the glossopharyngeal nerve and by the lip of the foramen of Luschka. The caudal retromastoid approach is more suitable than the translabyrinthine technique for recording from the cochlear nuclei as well as for implantation of stimulating electrodes into the cochlear nuclei for use as hearing prostheses. Author.

Proptosis as the initial presentation of fungal sinusitis in immunocompetent patients. Heier, J. S., Gardner, T. A., Hawes, M. J., McGuire, K. A., Walton, W. T., Stock, J. Ophthalmology Service, Fitzsimons Army Medical Center, Aurora, Colorado 80045-5001, USA. *Ophthalmology* (1995) May, Vol. 102 (5), pp. 713–7.
BACKGROUND: Fungal sinusitis typically occurs in immunocompromised patients. The authors report four cases of fungal sinusitis in immunocompetent young adults, all of whom had proptosis. METHODS: The diagnosis in all four patients was determined after orbital imaging and sinus biopsies. RESULTS: All four patients required surgical removal of the fungal source and anti-fungal chemotherapy postoperatively. CONCLUSION: Patients with proptosis, ocular pain, or other symptoms suggestive of orbital cellulitis unresponsive to antibiotic treatment should undergo radiographic imaging. If sinus disease is present, biopsy and culture may lead to the diagnosis of fungal disease. Surgical debridement and the appropriate systemic antifungal therapy usually lead to cure. Author.

Persistent acute otitis media: II. Antimicrobial treatment. Pichichero, M. E., Pichichero, C. L. Department of Pediatrics, University of Rochester Medical Center, NY 14642,USA. *Pediatric Infectious Diseases Journal* (1995) March, Vol. 14 (3), pp. 183–8.
In this three-year prospective study, 137 children with acute otitis media (AOM) that had not responded after one or two empiric antimicrobial treatment courses (termed persistent AOM) underwent tympanocentesis to determine additional antimicrobial therapy based on in vitro susceptibility testing of the bacterial isolate(s). One hundred and eleven children with AOM not previously treated are described for comparison. In the persistent AOM group middle ear aspirates grew Streptococcus pneumoniae (24 per cent), Haemophilus influenzae (seven per cent), Brahamella catarrhalis (seven per cent), Streptococcus pyogenes (six per cent), Staphylococcus aureus (five per cent), two pathogens (three per cent) or no bacterial growth (49 per cent); pathogens in previously untreated AOM were similar but fewer patients (30 per cent) had no bacterial growth. After tympanocentesis additional antimicrobial therapy for persistent AOM patients utilizing drugs shown to be effective in vitro against the isolated pathogen failed to produce clinical resolution of infection in 27 (28 per cent) of ears. Differing clinical efficacy was observed with various antimicrobials: amoxicillin (57 per cent failure); trimethoprim/sulfamethoxazole (75 per cent failure); cefaclor (37 per cent failure); cefixime (23 per cent failure); amoxicillin/clavulanate (12 per cent failure); and cefuroxime axetil (13 per cent failure). Presumptive clinical cure for previously untreated AOM patients was similar to that for untreated AOM except for fewer amoxicillin failures (30 per cent). We conclude that clinical failure in persistent AOM occurs (1) even when no pathogen is isolated from tympanocentesis (50 per cent of patients) and (2) despite demonstrated in vitro activity against culture-proved pathogens. Author.

Persistent acute otitis media: I. Causative pathogens. Pichichero, M. E., Pichichero, C. L. Department of Pediatrics, University of Rochester Medical Center, NY 14642, USA. *Pediatric Infectious Diseases Journal* (1995) March, Vol. 14 (3), pp. 178–83.
In this prospective study tympanocentesis was performed to determine the pathogens isolated from middle ear fluid of 200 ears in 137 children with acute otitis media (AOM) which had not responded after one or two empiric antimicrobial treatment courses (termed persistent AOM). For comparison tympanocentesis from 154 ears in 111 children with AOM not previously treated are described. Patients were enrolled from October, 1989, until September, 1992. In the persistent AOM group amoxicillin and trimethoprim/sulfamethoxazole were the most frequently used antimicrobials before tympanocentesis. Middle ear aspirates produced no pathogenic bacterial growth in 49 per cent of persistent AOM patients, Streptococcus pneumoniae in 24 per cent, Haemophilus influenzae in seven per cent, Branhamella catarrhalis in seven per cent, Streptococcus pyogenes in six per cent, Staphylococcus aureus in five per cent and two pathogens in three per cent. Two (18 per cent) of 11 S. pneumoniae isolates tested were penicillin-resistant; one was intermediate and one was highly resistant. Ten (83 per cent) of 12 H. influenzae and all of 11 B. catarrhalis AOM isolates produced beta-lactamase. In comparison previously untreated AOM patients produced no bacterial growth from tympanocentesis in 30 per cent, S. pneumoniae in 36 per cent (eight per cent penicillin-resistant), H. influenaze in 13 per cent (44 per cent beta-lactamase-producing) and B. catarrhalis in 11 per cent (85 per cent beta-lactamase producing). AOM which is persistent after initial empiric antimicrobial therapy may be caused by middle ear inflammation after bacteria are killed or involve penicillin-resistant S. pneumoniae, beta-lactamase-producing H. influenzae or B. catarrhalis more commonly than occurs in AOM which has not been recently treated. Author.

Dexamethasone therapy for children with bacterial meningitis. Meningitis Study Group. Wald, E. R., Kaplan, S. L., Mason, E. O. Jr., Sabo, D., Ross, L., Arditi, M., Wiedermann, B. L., Barson, W., Kim, K. S., Yogov, R., *et al.* University of Pittsburgh School of Medicine, Pennsylvania, USA. *Pediatrics* (1995) January, Vol. 95 (1), pp. 21-8. Comment in: *Pediatrics* (1995) January, **95** (1): 29–31.
OBJECTIVE: To determine whether treatment with dexamethasone and ceftriaxone for children with bacterial meningitis reduces the frequency of either sensorineural hearing loss or other neurologic sequelae. DESIGN. This was a prospective, multicentered, placebo-controlled clinical trial. Subjects were followed for one year. SETTING. The study was conducted in six children's hospitals located in Pittsburgh, Houston, Los Angeles, Chicago, Washington, D.C., and Columbus, Ohio. PATIENTS. Enrolled were 173 children, eight weeks to 12 years of age, with suspected bacterial meningitis; 143 children were evaluable. Eighty-seven per cent of patients were followed for at least six weeks to three months, and 67 per cent were followed for one year. INTERVENTIONS. Subjects were randomized to receive ceftriaxone with or without dexamethasone (0.15 mg/kg every six hours for four days). Auditory brainstem responses (ABR) were measured within 24 hours of admission. MAIN OUTCOME MEASURES. Hearing, development, and neurologic sequelae were assessed at the time of discharge and six weeks and one year later. MAIN RESULTS. One hundred forty-three patients (69 received dexamethasone and 74 received placebo) with bacterial meningitis were evaluable: Haemophilus influenzae type b (83), Streptococcus pneumoniae (33), Neisseria meningitidis (24), and three others. Overall, there was no significant difference in auditory outcome between dexamethasone and placebo recipients. Twenty-two children had bilateral moderate or more severe

hearing loss at the time of the first ARB. At follow-up, the resolution of hearing impairment was nearly identical for each group. Nine of 10 children who remained persistently deaf were deaf at the time of the first ABR. There were no differences in neurologic or developmental outcome between groups. CONCLUSION. All but one child with persistent bilateral moderate or more severe hearing loss had demonstrable deafness at the time of the first ABR. Dexamethasone did not significantly improve audiologic, neurologic, or developmental outcome in children with bacterial meningitis. Author.

MR imaging of the pediatric airway. Simoneaux, S. F., Bank, E. R., Webber, J. B., Parks, W. J. Department of Radiology, Egleston Children's Hospital, Atlanta, GA, USA. *Radiographics* (1995) March, Vol. 15 (2), pp. 287-98; discussion 298–9.
The mainstays of initial evaluation of the airway in infants and children are chest radiography and esophagography. Magnetic resonance (MR) imaging is frequently used next to diagnose specific abnormalities and obviates angiocardiography. MR imaging usually allows distinction between a double aortic arch and a right aortic arch with an aberrant left subclavian artery. In cases of pulmonary artery sling, MR imaging enables full evaluation of the vascular anatomy and may also demonstrate the tracheobronchial anomalies. MR imaging may aid in diagnosis of innominate artery compression syndrome by demonstrating the extent of the tracheal luminal narrowing, the tracheal configuration, the structure causing the compression, and the size of the thymus. Finally, MR imaging usually allows distinction of long-segment tracheal stenosis from tracheomalacia and is especially helpful in cases of isolated stenosis. Three-dimensional reconstructions are also useful in assessing relationships between vascular structures and the adjacent trachea. Author.

Psychological profile of help-seeking and non-help-seeking tinnitus patients. Attias, J., Shemesh, Z., Bleich, A., Solomon, Z., Bar-Or, G., Alster, J., Sohmer, H. Institute for Noise Hazards Research, Medical Corps, Chaim Sheba Medical Center, Ramat-Gan, Israel. *Scandinavian Audiology* (1995), Vol. 24 (1), pp. 13–8.
The psychological profile of tinnitus patients who sought treatment (Help-Seeking, HS) was compared with that of patients who did not seek help (non-help-seeking, NHS) and with normal control subjects. Psychological evaluations as well as hearing, tinnitus loudness, and tinnitus pitch were measured. Overall, the psychiatric symptomatology of HS (n = 50) was more severe with poorer effective coping abilities and externalization of locus of control than NHS (n = 50). However, the psychiatric symtomatology of the NHS was remarkably more severe than that in the normals (n = 73) and more like that in the HS even though they did not turn to treatment. Tinnitus loudness was significantly lower in HS than in NHS subjects. The lower the tinnitus loudness, the higher the psychiatric symptomatology. The trend towards subclinical abnormalities in NHS indicates their vulnerability to pathology and this requires the attention of the therapist in order to increase the patient's self-awareness and to suggest preventive coping strategies or relaxation techniques. Author.

An audit of hearing rehabilitation within the health service-past and present. Parving, A., Sibelle, P. Department of Audiology, Bispebjerg Hospital, Copenhagen, Denmark. *Scandinavian Audiology* (1995), Vol. 24 (1), pp. 33–8.
The present contribution can be considered as an audit of the hearing aid rehabilitation programme as performed in Copenhagen, based on an ongoing quality assurance. A comparative analysis was performed in outcome measures between two three-month periods in which the only change had been a transfer of the preliminary instruction in manipulation and management of hearing aid (HA) from the educational to the health sector. The data analysis was based on a questionnaire including three samples (Sample A, n = 800 evaluated before the change; sample B, n = 779 after the change; and sample C, n = 73 with no change, acting as a reference). The comparison demonstrated no significant differences in the ability to manage or manipulate HA between samples A and B, and no changes were found in the reference sample C. A significant decrease in the frequency of hearing-impaired subjects needing additional appointments in the health sector was found in sample B. Those subjects who at the HA fitting had made no request for additional educational services demonstrated a significantly higher frequency of 97 per cent capability to manage HA at the follow-up in comparison to only 84 per cent among those who had requested services compatible with the distribution of experienced/unexperienced HA users. The additional data analyses render no support for any effect of the educational services on the ability to manipulate and manage HA. Author.

Evaluation of a communication course for new hearing aid users. Norman, M., George, C. R., Downie, A., Milligan, J. MRC Institute of Hearing Research, Royal South Hants Hospital, Southampton, England. *Scandinavian Audiology* (1995), Vol. 24 (1): pp. 63–9.
A communication course for new hearing aid users, covering explanations of hearing loss and hearing aids, hearing tactics, lipreading and relaxation techniques in three two hour sessions, was developed. The course was tested on groups of adults fitted with NHS post-aural hearing aids at the Audiology Clinic at the Royal South Hants Hospital. The course content, presentation, length and pace were evaluated by means of a questionnaire given at the end of the last session, and the effects on aid usage, satisfaction and benefit ratings were assessed by pre- and post-fitting questionnaires given to those who attended and to a matched group of control subjects. The course was offered to 41 men and 46 women. The acceptance rate was rather higher for women than for men, but attendance rates were similar for both sexes, men attending 33 per cent and women 36 per cent of the sessions offered. No relationship was observed between age or degree or hearing loss and rates of acceptance and attendance. All those who completed the evaluation questionnaire were satisfied with the content, length, pace and presentation of the course, and considered that it had helped them to understand and cope with their hearing loss. Most (28 out of 31) felt that they would use their aids more as a result of the course. However, their aid usage and ratings of benefit derived from the aids did not differ significantly from those of a matched group of controls who were not offered the course. Author.