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Abstract Selection

Occupational pharyngitis associated with allergic patch test reactions from acrylics. Kanerva, L., Estlander, T., Jolanki, R., Pekkarinen, E. Institute of Occupational Health, Helsinki, Finland. *Allergy* (1992) October, Vol. 47 (5), pp. 571–3.
A female dentist specialized in orthodontics repeatedly developed symptoms of pharyngitis at work. A chamber provocation test indicated that her symptoms were caused by acrylics. Prick tests with acrylics were negative, while patch tests were strongly positive although the patient had no skin symptoms. The relationship between the symptoms and the patch test results is discussed. It is suggested that type IV allergic reactions may be involved in symptoms of the upper respiratory tract. Author.

Efficacy of cefixime in the treatment of acute otitis media in children. Owen, M. J., Anwar, R., Nguyen, H. K., Swank, P. R., Bannister, E. R., Howie, V. M. Department of Pediatrics, University of Texas Medical Branch, Galveston 77555-0319. *American Journal of Diseases in Children* (1993) January, Vol. 147 (1), pp. 81–6.
OBJECTIVE: To compare the efficacy of cefixime with amoxicillin in the treatment of acute otitis media in children. DESIGN: Randomized, nonblinded study. SETTING: General pediatric clinic at a university hospital in Texas. PARTICIPANTS: A volunteer sample of 201 children, aged two months through six years. INTERVENTIONS: A 10-day oral course of cefixime (8 mg/kg per day administered once daily) or amoxicillin (40 mg/kg per day administered in three divided doses (every eight hours)). MEASUREMENTS/MAIN RESULTS: Tympanocentesis for bacterial culture was performed on all affected ears on enrolment and after four to six days of therapy. The patients were evaluated clinically four to six days after starting therapy, at the end of therapy, and three to four weeks after therapy was completed. Using Fisher's Exact Test, no significant difference was found between the two treatment groups for rate of clinical improvement or rate of eradication of Haemophilus influenzae and Streptococcus pneumoniae. However, combining the results from this study and two previously reported studies, cefixime was found to be more effective in eradication of H influenzae and less effective in eradication of S pneumoniae. Author.

Herpes simplex virus from respiratory tract secretions: epidemiology, clinical characteristics, and outcome in immunocompromised and nonimmunocompromised hosts. Schuller, D., Spessert, C., Fraser, V. J., Goodenberger, D. M. Respiratory and Critical Care Division, Washington University School of Medicine, St Louis, Missouri. *American Journal of Medicine* (1993) January, Vol. 94 (1), pp. 29–33.
PURPOSE: The purpose of this study was to review the course of patients with herpes simplex virus (HSV) recovered from respiratory tract secretions, and to compare the demographics, clinical characteristics, and outcomes of immunocompromised versus nonimmunocompromised patients. PATIENTS AND METHODS: Retrospective review of medical records of 42 consecutive patients who had respiratory tract cultures positive for HSV-1 between May 1988 and August 1990 at a major university-affiliated hospital. RESULTS: Twenty-seven patients (64 per cent) were not immunocompromised. On the average, the nonimmunocompromised patients were 20 years older (mean age: 67 ± 15, p = 0.001), had a higher incidence of tobacco smoking (p = 0.04), and were more frequently endotracheally intubated prior to HSV isolation (p = 0.002). Nonimmunocompromised patients more frequently had bronchospasm (44 per cent versus 7 per cent, p = 0.01), leukocytosis (16,400 versus 6,900/mm^3, p = 0.001), and difficulty weaning from mechanical ventilation (63 per cent versus 13 per cent, p = 0.002). Mortality was also greater in the nonimmunocompromised group (70 per cent versus 33 per cent, p = 0.02). In addition, for survivors, days of mechanical ventilation (8 ± 7 versus 2 ± 4, p = 0.03), length of stay in the intensive care unit (10 ± 8 versus 2 ± 4 days, p = 0.004), and length of stay in the hospital (37 ± 23 versus 16 ± 14 days, p = 0.04) were all significantly longer for the nonimmunocompromised patients. CONCLUSION: These data suggest that HSV isolation from lower respiratory secretions is associated with a more severe presentation and a worse outcome in immunocompetent patients than in immunosuppressed patients. Author.

Local application of atropine attentuates the upper airway reaction to cold, dry air. Cruz, A. A., Togias, A. G., Lichtenstein, L. M., Kagey-Sobotka, A., Proud, D., Naclerio, R. M. Department of Medicine (Division of Clinical Immunology), Johns Hopkins University School of Medicine, Baltimore, Maryland. *American Review of Respiratory Diseases* (1992) August, Vol. 146 (2), pp. 340–6.
In some individuals, inhalation of cold, dry air (CDA) provokes symptoms of rhinitis, accompanied by an increase in the levels of inflammatory mediators and markers of plasma leakage of recovered nasal lavages. Because rhinorrhea is a major component of this reaction and because nasal glands are heavily innervated by the parasympathetic system, we assessed the effect of atropine on the nasal reaction to CDA. Using a double-blind, randomized, crossover design, we administered a total dose of 0.5 mg of atropine or placebo intranasally to 18 volunteers before provocation with CDA. The reaction was monitored with symptom scores and by measuring the concentrations of histamine, N-alpha-p-tosyl-L-arginine methyl ester (TAME)-esterase activity and albumin, as well as the osmolality of lavage fluids before and after the provocation. Atropine significantly reduced rhinorrhea, the levels of histamine, and TAME-esterase activity as well as the osmolality of recovered lavage fluids, but had no effect on nasal congestion or albumin. Even with atropine, however, rhinorrhea and TAME-esterase activity were still significantly increased over the prechallenge baseline. Our results demonstrate that atropine-sensitive parasympathetic efferent pathways contribute to the CDA-induced rhinitis. We speculate that (1) the glandular and the vascular events of the upper airway reaction to dry air have different pathophysiologic mechanisms; (2) a significant component of TAME-esterase activity in lavage fluids may be of glandular origin; and (3) in addition to parasympathetic nerve activation, other mechanisms are involved in the upper airway reaction to dry air. The mechanism(s) leading to the reduction of histamine is unknown. Author.

Bilateral bronchial anomaly. A pathogenetic factor in spontaneous pneumothorax. Bense, L., Eklund, G., Wiman, L. G. Department of Pulmonary Medicine, Huddinge University Hospital, Sweden. *American Review of Respiratory Diseases* (1992) August, Vol. 146 (2), pp. 513–6.
Flexible fiberoptic bronchoscopy (FFB) was performed in 26 never-smokers with healed spontaneous pneumothorax (SP) with the aim of detecting and localizing any bronchial obstruction, including congenital anomaly. In a case-control study these patients were compared with a consecutive, randomly sampled, control group of 41 patients who were undergoing FFB for respiratory symptoms but who had not had a SP. In both groups the endobronchial anatomy with respect to such anomalies, which could be classified as disproportionate bronchial anatomy, an accessory bronchus, and/or a missing bronchus, was compared with normal anatomy. All except one of the 26 patients with SP but only four of the 41 control patients without SP had such bronchial anomalies bilaterally. This corresponds to an odds ratio of 231 (95 per cent confidence interval, 24 to 880; $P<0.001$). The significantly higher frequency of bilateral bronchial anomalies in never-smokers with SP suggests that a virtual prerequisite for the occurrence of SP has been found. However causal links between the probably congenital bronchial anomalies and SP have not yet been identified. Author.

A case-control study of occuptional risk factors for laryngeal

cancer. Wortley, P., Vaughan, T. L., Davis, S., Morgan, M. S., Thomas, D. B. Department of Epidemiology, University of Washington. *British Journal of Industrial Medicine* (1992) December, Vol. 49 (12), pp. 837–44.
To determine whether specific jobs and occupational exposures are associated with laryngeal cancer lifetime occupational histories from a population-based case-control study in western Washington were examined. The study included 235 cases diagnosed between September 1983 and February 1987, and 547 controls identified by random digit dialing. After controlling for alcohol use, cigarette smoking, age and education, significantly increased risks were found for painters in construction (odds ratio (OR)) = 2.8, (95 per cent CI 1.4–6.9), supervisors and miscellaneous mechanics (OR = 2.3, 95 per cent CI 1.1–4.8), construction workers (OR = 3.4, 95 per cent CI 1.4–8.1), metalworking and plastic working machine operators (OR = 2.6, 95 per cent CI 1.3–4.9) and handlers, and equipment cleaners and labourers (OR = 1.5, 95 per cent CI 1.0–2.2). Allowing for a 10 year induction and latent period did not have a consistent effect on the associations. Potential exposures to asbestos, chromium, nickel, formaldehyde, diesel fumes, and cutting oils were assessed by using a job exposure matrix developed for ths study. Three measures of exposure were examined—namely, peak, duration, and an intensity weighted exposure score. No significantly raised risks were seen, although increased risk was suggested among those exposed long term to formaldehyde in jobs with the highest exposures. Author.

Regional lymph node involvement and its significance in the development of distant metastases in head and neck carcinoma. Leemans, C. R., Tiwari, R., Nauta, J. J., van der Waal , I., Snow, G. B. Department of Otolaryngology—Head and Neck Surgery, Free University Hospital, Amsterdam, The Netherlands. *Cancer* (1993) January 15, Vol. 71 (2), pp. 452–6.
BACKGROUND. The incidence of distant metastases in head and neck cancer patients is rising because of greater locoregional control of the disease. METHODS. The relative risks for having distant metastases as first site of failure relative to the regional lymph node involvement were determined. RESULTS. The overall incidence was 10.7 per cent, with a clear relationship between the number of involved lymph nodes and extranodal spread on one hand, and distant spread on the other hand. The group with histopathologic presence of disease in the neck had twice as much distant metastases as did those with histopathologic absence (13.6 per cent versus 6.9 per cent). Patients with more than three histologically positive lymph nodes were most at risk for having distant metastases (46.8 per cent). The presence of extranodal spread meant a threefold increase in the incidence of distant metastases, compared with patients without this feature (19.1 per cent versus 6.7 per cent). CONCLUSIONS. Patients with three or more positive nodes and with extranodal spread may benefit from adjuvant systemic therapy. Author.

Lugol's iodine dye-enhanced endoscopy in patients with cancer of the oesophagus and head and neck. Chisholm, E. M., Williams, S. R., Leung, J. W., Chung, S. C., Van Hasselt, C. A., Li, A. K. Prince of Wales Hospital, Chinese University of Hong Kong, Shatin. *European Journal of Surgical Oncology* (1992) December, Vol. 18 (6), pp. 550–2.
Lugol's iodine dye indicates the presence of unsuspected early oesophageal cancers during endoscopy at which such cancers fail to show the characteristic black colour change. We evaluated Lugol's iodine dye-enhanced endoscopy in 17 patients with oesophageal cancer. In a further 37 patients with head and neck cancer we examined the use of Lugol's iodine since these patients have a 29 per cent risk of synchronous oesophageal cancer. The oesophagus was sprayed with Lugol's iodine (1.5 per cent) during endoscopy. Any areas not turning black were biopsied. In 13 patients with oesophageal cancer discrete areas beyond the macroscopically obvious primary tumour showed no change in colour. Biopsy revealed cancer in all cases. Six synchronous cancers were found in the head and neck group, one of which was identified only by the use of Lugol's iodine. Lugol's iodine augmented the information gained about the oesophageal mucosa during endoscopy. It revealed unsuspected cancer which altered the management of patients with primary oesophageal cancer as well as those with head and neck cancer. We recommend the routine use of Lugol's iodine-enhanced endoscopy for surveillance of all 'at risk' oesophageal cases. Author.

Localization of the gene for branchiootorenal syndrome to chromosome 8q. Smith, R. J., Coppage, K. B., Ankerstjerne, J. K., Capper, D. T., Kumar, S., Kenyon, J., Tinley, S., Comeau, K., Kimberling, W. J. Department of Otolaryngology—Head and Neck Surgery, University of Iowa, Iowa City 52242. *Genomics* (1992) December, Vol. 14 (4), pp. 841–4.
Branchiootorenal syndrome is an autosomal dominant disorder that affects an estimated 2 per cent of profoundly deaf children. In addition to hearing impairment, it is characterized by a lop-ear deformity, preauricular pits, branchial cleft sinus tracts, and renal anomalies. The pathogenesis of the disease remains unknown; however, the defective gene has been localized to chromosome 8q by family linkage studies. Author.

A gene for Usher syndrome type I (USH1A) maps to chromosome 14q. Kaplan, J., Gerber, S., Bonneau, D., Rozet, J. M., Delrieu, D., Briard, M. L., Dollfus, H., Ghazi, I., Dufier, J. L., Frezal, J., *et al.* Unite de Recherches sur les Handicaps Genetiques de l'Enfant, INSERM U12 Hopital des Enfants Malades, Paris, France. *Genomics* (1992) December, Vol. 14 (4), pp. 979–87.
Usher syndrome (US) is an autosomal recessive disease characterized by congenital hearing impairment and retinitis pigmentosa. It is the most frequent cause of deaf-blindness in adults and accounts for three to 6 per cent of deaf children. Here, we report the genetic mapping of a gene for US type 1 (USH1A), the most severe form of the disease, to the long arm of chromosome 14, by linkage to probe MLJ14 at the D14S13 locus in 10 families of Western France ancestry ($Z = 4.13$ at theta = 0). Among them, eight families originated from a small area of the Poitou-Charentes region ($Z = 3.78$ at theta = 0), suggesting that a founder effect could be involved. However, since not all US type I families were found to be linked to this locus, the present study provides evidence for genetic heterogeneity of this condition (heterogeneity versus homogeneity test HOMOG, $P<0.05$; heterogeneity versus no linkage, $P<0.01$). Author.

Linkage of Usher syndrome type I gene (USH1B) to the long arm of chromosome 11. Kimberling, W. J., Moller, C. G., Davenport, S., Priluck, I. A., Beighton, P. H., Greenberg, J., Reardon, W., Weston, M. D., Kenyon, J. B., Grunkemeyer, J. A., *et al.* Center for Hereditary Communication Disorders, Boys Town National Research Hospital, Omaha, Nebraska 68131. *Genomics* (1992) December, Vol. 14 (4), pp. 988–94.
Usher syndrome is the most commonly recognized cause of combined visual and hearing loss in technologically developed countries. There are several different types and all are inherited in an autosomal recessive manner. There may be as many as five different genes responsible for at least two closely related phenotypes. The nature of the gene defects is unknown, and positional cloning strategies are being employed to identify the genes. This is a report of the localization of one gene for Usher syndrome type I to chromosome 11q, probably distal to marker D11S527. Another USH1 gene had seen previously localized to chromosome 14q, and this second localization establishes the existence of a new and independent locus for Usher syndrome. Author.

Localization of two genes for Usher syndrome type I to chromosome 11. Smith, R. J., Lee, E. C., Kimberling, W. J., Daiger, S. P., Pelias, M. Z., Keats, B. J., Jay, M., Bird, A., Reardon, W., Guest, M., *et al.* Department of Otolaryngology—Head and Neck Surgery, University of Iowa, Iowa City 52242. *Genomics* (1992) December, Vol. 14 (4), pp. 995–1002.
The Usher syndromes (USH) are autosomal recessive diseases characterized by congenital sensorineural hearing loss and progressive pigmentary retinopathy. While relatively rare in the general population, collectively they account for approximately 6 per cent of the congenitally deaf population. Usher syndrome type II (USH2) has been mapped to chromosome 1q (W. J. Kimberling, M.D. Weston, C. Moller, *et al.*, 1990, *Genomics* **7:** 245–249; R. A. Lewis, B. Otterud, D. Stauffer, *et al.*, 1990, *Genomics* **7:** 250–256), and one form of Usher syndrome type I (USH1) has been mapped to chromosome 14q (J. Kaplan, S. Gerber, D. Bonneau, J. Rozet, M. Briord, J. Dufier, A. Munnich, and J. Frezel, 1990, *Cytogenetic Cell Genetics*, **58:** 1988). These loci have been excluded as regions of USH genes in our data set, which is composed of eight French–Acadian USH1 families and 11 British USH1 families. Both of these sets of families show linkage to loci on chromosome 11. Linkage analysis demonstrates locus heterogeneity between these sets of families, with the French-Acadian families showing linkage to D11S419 ($Z = 4.20$, theta = 0) and the British families showing linkage to D11S527 ($Z = 6.03$, theta = 0). Genetic heterogeneity of the data set was confirmed using HOMOG and the M test (log likelihood

ratio >10(5)). These results confirm the presence of two distinct USH1 loci on chromosome 11. Author.

Cranial nerve length predicts the risk of delayed facial and trigeminal neuropathies after acoustic tumor stereotactic radiosurgery. Linskey, M. E., Flickinger, J. C., Lunsford, L. D. Department of Neurological Surgery, University of Pittsburgh School of Medicine, PA. *International Journal of Radiation, Oncology, Biology and Physiology* (1993) January 15, Vol. 25 (2), pp. 227–33.
PURPOSE: To test the hypothesis that length of cranial nerve irradiated is a major factor predicting the risk of cranial nerve injury following radiosurgery and to identify any other significant related treatment factors. METHODS AND MATERIALS: Ninety-two patients (93 acoustic tumors) were treated with a 201 source Cobalt-60 gamma unit from 1987 to 1990 and prospectively followed. The range of minimum tumor dose was 12–20 Gy and maximum dose 24–50 Gy. Univariate and multivariate analyses were used to evaluate any correlations between tumor measurements and treatment factors, with the development of trigeminal and facial neuropathies following radiosurgery. RESULTS: The risks of trigeminal and facial neuropathy following radiosurgery were associated with the non-petrous distance and mid porous transverse tumor diameters respectively (anatomically related to the irradiated length of cranial nerves V and VII respectively) in both univariate ($p = 0.002$ for V and $p = 0.026$ for VII) and multivariate ($p = 0.004$ for V and $p = 0.055$ for VII) analyses. Tumor volume, other tumor measurements, maximum dose, minimum tumor dose, and tumor dose inhomogeneity were not significantly related to either trigeminal or facial neuropathy in univariate and multivariate analyses. CONCLUSION: Within a minimum tumor dose range of 12–20 Gy, the incidence of delayed trigeminal or facial neuropathy depended more on the estimated length of nerve irradiated than the tumor dose or tumor volume. In the future, the risk of delayed facial or trigeminal cranial neuropathy may be reduced significantly by performing radiosurgery when the tumor still has both a small mid-porous transverse diameter and a small pons-petrous distance. Author.

Consonant recognition by some of the better cochlear-implant patients. Tyler, R. S., Moore, B. C. Department of Otolaryngology, Head and Neck Surgery, University of Iowa, Iowa City 52242. *Journal of the Acoustical Society of America* (1992) December, Vol. 92 (6), pp. 3068–77.
Fifty-four of the better cochlear-implant patients from Europe and the United States were tested on two consonant recognition tests using nonsense syllables. One was produced in an accent appropriate for their own language by a male and a female talker. Recorded tokens of /ibi, idi, igi, ipi, iti, iki, ifi, ivi, ifi, isi, izi, imi, ini/ were presented. With the French syllables, six patients with the Chorimac device averaged 18 per cent correct (6–29 per cent). With the German syllables, nine patients with the 3M/Vienna device averaged 34 per cent correct (17–44 per cent), ten patients with the Nucleus device (tested in Hannover) averaged 31 per cent correct (19–42 per cent), and ten patients with the Duren/Cologne device averaged 27 per cent correct (10–56 per cent). With the English syllables, ten patients with the Nucleus device (tested in the United States) averaged 42 per cent correct (29–62 per cent), and nine patients with the Symbion device averaged 46 per cent correct (31–69 per cent). An information-transmission analysis and sequential information—transfer analysis of the confusions suggested that different implants provided differing amounts of feature information. The place of articulation feature was typically the most difficult to code for all implants. In the second test a male and a female talker recorded the stimuli /ibi, idi, igi, imi, ini, ifi, isi, izi/ in a single manner that was appropriate for all three languages. Six patients with the Chorimac device averaged 27 per cent (13–48 per cent), ten patients with the Duren/Cologne implant averaged 29 per cent (15–75 per cent), ten patients with the Nucleus device (tested in Hannover) averaged 40 per cent (25–58 per cent), ten patients with the Nucleus device (tested in the United States) averaged 49 per cent (40–60 per cent), nine patients with the Symbion device averaged 61 per cent (40–75 per cent) and nine patients with the 3M/Vienna device averaged 41 per cent (29–52 per cent) correct. Author.

Analysis of dynamic behavior of human middle ear using a finite-element method. Wada, H., Metoki, T., Kobayashi, T. Department of Mechnical Engineering, Tohoku University, Sendai, Japan. *Journal of the Acoustical Society of America* (1992) December, Vol. 92 (6), pp. 3157–68.
Applying the general-purpose finite-element package program (ISAP), a three-dimensional finite-element method (FEM) model of a human right middle ear, which included ossicles, was made and the mechanical properties and boundary conditions of the middle ear were determined by a comparison between the numerical results obtained from the FEM analysis and the measurement results of the fresh cadavers, normal subjects and patients, which were obtained by our developed sweep frequency middle ear analyzer (MEA). The 'Elastic' boundary condition consisting of linear and torsional springs at the eardrum attachments to the annular ligament was more appropriate fro the actual condition than 'fully clamped' one. Rotational axis of the ossicular chain was assumed to be a fixed straight line from the anterior process of the malleus to the short process of the incus, and a load of the ossicular chain and cochlea was simplified to be expressed by the stiffness of the cochlea. Vibration patterns of the eardrum and ossicles at the first resonance frequency, obtained under these assumptions, were in agreement with the experimental results obtained by means of time-averaged holography and by using a video measuring system, except for the relatively large displacements at the tympanic ring. Author.

Neuropeptide Y is a vasoconstrictor in human nasal mucosa. Baraniuk, J. N., Silver, P. B., Kaliner, M. A., Barnes, P. J. Department of Medicine, Georgetown University, Washington, DC 20007. *Journal of Applied Physiology* (1992) November, Vol. 73 (5), pp. 1867–72.
Neuropeptide Y (NPY) is a neurotransmitter in sympathetic nerve fibers in human nasal mucosa. Like norepinephrine, NPY acts as a vasoconstrictor. An established method of nasal provocation was used to determine the effects of topically applied NPY on nasal resistance to airflow measured by anterior rhinomanometry, the protein content of nasal secretions, and the protein content of bradykinin-induced secretions. NPY (2.3 nmol) reduced the resistance to inspiratory airflow by 57 ± 18 per cent ($P<0.001$) in 10 normal subjects and by 50 ± 17 per cent ($P<0.05$) in 12 subjects with perennial rhinitis. In nasal provocations, NPY in doses of 0.1–10 nmol had no effect on vascular (albumin), glandular (lysozyme, glycoconjugate), or total proteins present in lavaged nasal secretions. Because the vasoconstrictor properties of NPY may only be apparent in the presence of increased vascular permeability and albumin exudation, bradykinin (BK) nasal provocation was performed. BK (500 nmol) significantly increase total protein (10- to 20-fold), albumin (10- to 30-fold), and glycoconjugate (2- to 5-fold) in lavage fluid. NPY (2.3 nmol) reduced BK-induced total protein by 59 ± 15 per cent ($P<0.05$) and albumin by 63 ± 17 per cent ($P<0.02$) but had no significant effect on glandular secretion. Therefore exogenous administration of NPY to the human nasal mucosa reduced nasal airflow resistance and albumin exudation without affecting submucosal gland secretion. NPY agonists may be useful for the treatment of mucosal diseases characterized by vasodilation, vascular permeability, and plasma exudation. Author.

M1 and M3 muscarinic antagonists inhibit human nasal glandular secretion in vitro. Mullol, J., Baraniuk, J. N., Logun, C., Merida, M., Hausfeld, J., Shelhamer, J. H., Kaliner, M. A. Servei de Pneumologia i Allergia Respiratoria, Hospital Clinic, Barcelona, Spain. *Journal of Applied Physiology* (1992) November, Vol. 73 (5), pp. 2069–73.
Mucus glycoproteins (MGP) are high-molecular-weight glycoconjugates that are released from submucosal glands and epithelial goblet cells in the respiratory tract. Muscarinic receptors have an important role in the regulation of human nasal glandular secretion and mucus production, but it is not known which of the five muscarinic receptor subtypes are involved. The effect of nonselective and M1-, M2-, and M3-selective muscarinic antagonists on methacholine (MCh)-induced MGP secretion from human nasal mucosal explants was tested in vitro. MGP was asssayed by enzyme-linked immunosorbent assay using a specific anti-MGP monoclonal antibody (7F10). MCh (100 microM) induced MGP secretion up to 127 per cent compared with controls. MCh-induced MGP release was significantly inhibited by atropine (100 microM), the M, receptor antagonist pirenzepine (10–100 microM), and the M3 receptor antagonist 4-diphenylacetoxy-N-methylpiperidine methiodide (4-DAMP; 1–100 microM). 4-DAMP significantly inhibited MCh-induced MGP release at a lower concentration (1 microM) than pirenzepine (10 microM). The M2 receptor antagonists AF–DX 116 and gallamine (both at 100 microM) had no effect. No antagonist alone had a significant effect on MGP release. These results indicate that the M1 and M3 muscarinic receptor subtypes regulate MGP

secretion from human nasal mucosa and suggest that the M3 receptor has the predominant effect. Author.

Sinusitis and atopy in human immunodeficiency virus infection. Small, C. B., Kaufman, A., Armenaka, M., Rosenstreich, D. L. Department of Medicine, North Central Bronx Hospital, New York. *Journal of Infectious Diseases* (1993) February, Vol. 167 (2), pp. 283–90.
Sinusitis is increased in patients with human immunodeficiency virus (HIV) infection. To determine the underlying mechanism(s), 37 HIV-positive patients were evaluated. HIV-negative controls included 21 with rhinosinusitis, 32 with atopy, and 16 without sinusitis. Twenty-two HIV-positive patients (59 per cent) had sinusitis; 14 of them had AIDS. There was a significant association between sinusitis severity and stage of HIV infection ($P<0.05$). IgE levels were higher in the HIV-positive patients, increased with disease progression, and were strongly correlated with sinusitis severity ($P<0.01$). Of HIV-positive patients, 72 per cent exhibited more than two positive skin tests compared with 24 per cent of HIV-negative rhinosinusitis patients and 12.5 per cent of controls ($P<0.05$). Sinusitis is common in HIV-positive patients, especially those with AIDS. HIV causes an allergic diathesis with increased IgE levels and allergic reactivity. There is a significant correlation between IgE levels and sinusitis severity, suggesting sinusitis is part of this acquired atopic state. Author.

A genetic study of type 2 neurofibromatosis in the United Kingdom. I. Prevalence, mutation rate, fitness, and confirmation of maternal transmission effect on severity. Evans, D. G., Huson, S. M., Donnai, D., Neary, W., Blair, V., Teare, D., Newton, V., Strachan, T., Ramsden, R., Harris, R. Department of Medical Genetics, St Mary's Hospital, Manchester. *Journal of Medical Genetics* (1992) December, Vol. 29 (12), pp. 841–6.
A clinical and genetic study of type 2 neurofibromatosis (NF2) has been carried out in the United Kingdom. Virtually complete ascertainment of cases in the north-west of England was achieved and suggests a population incidence of 1 in 33,000 to 40,000. In the UK as a whole, 150 cases have been identified and been used to study the clinical and genetic features of NF2. The autosomal dominant inheritance of NF2 was confirmed, 49 per cent of cases were assessed as representing new mutations, and the mutation rate was estimated to be 6.5×10^{-6}. Evidence to support a maternal gene effect was found in that age at onset was 18.17 years in 36 maternally inherited cases and 24.5 in 20 paternally inherited cases ($p = 0.027$). the preponderance of maternally inherited cases was also significant ($p = 0.03$). Data are presented which suggest that there are two types of NF2, one with later onset and bilateral vestibular schwannomas as the only usual feature, and the other with earlier onset and multiple other tumours. A considerable number of cases did not fall easily into one or other group and other factors such as maternal effect on severity and anticipation need to be considered. Author.

A genetic study of type 2 neurofibromatosis in the United Kingdom. II. Guidelines for genetic counselling. Evans, D. G., Huson, S. M., Donnai, D., Neary, W., Blair, V., Newton, V., Strachan, T., Harris, R. Department of Medical Genetics, St Mary's Hospital, Manchester. *Journal of Medical Genetics* (1992) December, Vol. 29 (12), pp. 847–52.
The major defining features, age at onset of symptoms, and survival in 150 patients with type 2 neurofibromatosis (NF2) have been studied. The mean age at onset was 21.57 years ($n = 110$) and no cases presented after 55 years of age. Patients presented with symptoms attributable to vestibular schwannomas (acoustic neuroma), cranial meningiomas, and spinal tumours. In 97 cases studied personally by the authors, skin and eye examination were found to be useful to detect early signs of the condition. Examination of the skin is likely to assist in early diagnosis in at least 10 per cent of cases and examination of the eye for a lens opacity or cataract in at least as many again. There are marked interfamilial differences in disease severity and tumour susceptibility. Vestibular schwannomas are not fully penetrant, but the condition is usually expressed in another way. Alteration to the current diagnostic criteria is advocated to cover the lack of provision for new mutations. A screening protocol is proposed and the effect of disease heterogeneity on management is discussed. Author.

Coordination of eye and head movements during smooth pursuit in patients with vestibular failure. Waterson, J. A., Barnes, G. R., Grealy, M. A., Luxon, L. M. MRC Human Movement and Balance Unit, National Hospital for Neurology and Neurosurgery, London. *Journal of Neurology, Neurosurgery and Psychiatry* (1992) December, Vol. 55 (12), pp. 1125–31.
During pursuit of smoothly moving targets with combined eye and head movements in normal subjects, accurate gaze control depends on successful interaction of the vestibular and head movement signals with the ocular pursuit mechanisms. To investigate compensation for loss of the vestibulo-ocular reflex during head-free pursuit in labyrinthine-deficient patients, pursuit performance was assessed and compared under head-fixed and head-free conditions in five patients with isolated bilateral loss of vestibular function. Target motion consisted of predictable and unpredictable psuedo-random waveforms containing the sum of three or four sinusoids. Comparison of slow-phase gaze velocity gains under head-free and head-fixed conditions revealed no significant differences during pursuit of any of the three pseudo-random waveforms. The finding of significant compensatory eye movement during active head movements in darkness in labyrinthine-deficient patients, which were comparable in character and gain to the vestibular eye movement elicited in normal subjects, probably explains the similarity of the head-fixed and head-free responses. In two additional patients with cerebellar degeneration and vestibular failure, no compensatory eye movement response was observed, implying that the cerebellum is necessary for the generation of such responses in labyrinthine-deficient patients. Author.

Acute epiglottitis in adults: a potentially lethal cause of sore throat. Denholm, S., Rivron, R. P. Otolaryngology Unit, Royal Infirmary, Edinburgh, UK. *Journal of the Royal College of Surgeons of Edinburgh* (1992) October, Vol. 37 (5), pp.333–5.
The diagnosis, management and outcome in 12 adults with acute epiglottitis was reviewed. Painful dysphagia was a universal symptom and respiratory distress affected eight patients, six of whom required urgent airway intervention. All patients received parenteral antibiotics, ten received steroids and four received adrenaline. Respiratory distress resolved in two patients given adrenaline and airway intervention was avoided. Indirect laryngoscopy is the investigation of choice and this is preferable to neck radiology. Two patients died and it is stressed that this condition must be distinguished from other more common causes of a severe sore throat. The patient should be managed in a unit with the facilities and expertise to effect acute airway intervention. Author.

Surgical management of high jugular bulb in acoustic neurinoma via retrosigmoid approach. Shao, K. N., Tatagiba, M., Samii, M. Neurosurgical Institute, Veterans General Hospital, Taiwan. *Neurosurgery* (1993) January, Vol. 32 (1), pp. 32–36; discussion 36–7.
Of 200 patients with acoustic neurinoma undergoing an operation via the retrosigmoid transmeatal approach in the semisitting position, 18 patients had a high jugular bulb on the tumor side. The frequency was 9 per cent. From a neurosurgical point of view, a jugular fossa above the low border of the internal auditory canal (IAC) is classified as a high one. All 200 patients were evaluated by computed tomography with bone window reconstruction of high-resolution thin axial slices (1.5 mm). High jugular bulbs were classified into three grades as follows: Grade I, jugular bulb situated less than 1.5 mm above the low border of IAC; Grade II, jugular bulb between 1.5 and 3.0 mm above the low border of the IAC; Grade III, jugular bulb >3 mm above the low border of IAC. There were eight patients with Grade I, six patients with Grade II, and four patients with Grade III. In these patients, in order to open the IAC without concomitant injury of the jugular bulb, the superior posterior portion of the porus was drilled away. Opening the jugular fossa was unavoidable in Grade III cases. No difference was noted in functional preservation of facial or cochlear nerve between HJB cases and normal jugular bulb cases, but HJB cases had a higher frequency of air embolism during tumour removal than did normal cases (16 versus 5 per cent), especially Grade III cases (two of four). There was no mortality or morbidity in the cases of air embolism. Details of the surgical procedure in such cases are discussed. Author.

A prospective, randomized study of cochlear implants. The Department of Veterans Affairs Cochlear Implant Study Group (see comments). Cohen, N. L., Waltzman, S. B., Fisher, S. G. Department of Otolaryngology, New York University school of Medicine, NY 10016. *New England Journal of Medicine* (1993) January 28, Vol. 328 (4), pp. 281–2.
BACKGROUND. Cochlear implants restore some degree of hear-

ing in patients with severe hearing impairment, but the efficacy of different implants has not been compared. We conducted a prospective trial to compare several cochlear implants. METHODS. We studied 82 patients who were randomly assigned to receive one of three cochlear implants: the Ineraid multichannel implant (implant 1), the Nucleus multichannel implant (implant 2), and the 3M/Vienna single-channel implant (implant 3). All the patients had profound deafness, and none had derived benefit from hearing aids. The assigned device was successfully implanted in 80 patients. Twenty-four hearing tests were used to assess the patients' performance before implantation and 12 and 24 months after implantation. The tests were grouped into five categories according to their content, and a weighted composite index was developed to provide a single numerical indicator of the overall auditory response. RESULTS. All the patients were able to hear with their implants. Nineteen of the 30 patients (63 per cent) who received implant 2, 18 of the 30 patients (60 per cent) who received implant 1, and 1 of the 20 patients (5 per cent) who received implant 3 were able to distinguish some words and sentences. The scores for the composite index were similar in the patients who received implant 1 and those who received implant 2, and were higher in both these groups than in the patients who received implant 3 ($p = 0.02$). When 24 patients with implant 2 were given an improved speech processor, their composite index increased significantly within three months ($P < 0.001$); their score at that time was also significantly higher ($P = 0.04$) than the score of the patients with implant 1 at 24 months. Age at implantation, lip-reading ability, and IQ were prognostic indicators of the patients' performance with a cochlear implant. CONCLUSIONS. Multichannel cochlear implants are superior to single-channel implants, especially for understanding speech. Changes in speech processing can improve patients' performance. Author.

Use of auricular cartilage in the repair of orbital floor defects. Hendler, B. H., Gataeno, J., Smith, B. M. University of Pennsylvania School of Dental Medicine, Philadelphia. *Oral Surgery, Oral Medicine, Oral Pathology* (1992) December, Vol. 74 (6), pp. 719–22.
Various materials have been used to repair orbital defects. This article advocates the use of autogenous conchal cartilage, especially in the repair of large posttraumatic defects, where contour, biocompatibility, and strength are most important. The technique for harvesting the cartilage is reviewed, and a case demonstrating its successful use is reported. Author.

Congenital conductive hearing loss: the need for early identification and intervention. Stewart, J. M., Downs, M. P. University of Colorado, School of Medicine, Denver. *Pediatrics* (1993) February, Vol. 91 (2), pp. 355–9.
Pediatricians are familiar with conductive hearing loss, but to many it is synonymous with otitis media of some type. There is a group of children who have anatomic abnormalities of the external or middle ear causing their hearing losses. The records of 565 hearing-impaired children were reviewed, and 54 with non-otitis-related conductive hearing loss were found. Date of birth, degree of loss, diagnosis or presence of any associated abnormalities, and ages of confirmation and intervention were studied. There were 22 children with microtia, 14 with abnormalities of the external auditory canal and normal pinnae, 15 with obvious dysmorphic features including nine who had syndromes well known to be associated with hearing abnormalities, and only three who had isolated hearing loss. Despite all these clues, hearing loss was diagnosed in only 10 children (excluding those with bilateral microtia) before 12 months of age although their average hearing loss was 45 dB. It is important for the primary care provider to recognize these children as early as possible as their loss is permanent and almost always more severe than that seen in otitis. Author.

Defining the relationship between cochlear hearing loss and acoustic reflex thresholds. Cohen, M., Prasher, D. Neuro-Otology Department, Institute of Neurology, National Hospital for Neurology and Neurosurgery, London. *Scandinavian Audiology* (1992), Vol. 21 (4), pp. 225–38.
In this study several methods of defining the relationship between the magnitude of cochlear hearing loss and the acoustic reflex threshold (ART) levels were examined, with a view to defining the appropriate upper limits of ART that would ease clinical applicability and reduce the false positive rate. The 90th percentile, two standard deviations (SD) from the mean, the regression method and an empirical method based on the scatter plots of the ART at each activator frequency were all applied to the results of 99 patients with cochlear and/or peripheral vestibular pathology. The upper limits of ART defined on the basis of the scatter plots provided the most appropriate upper limits for different ranges of hearing loss, with relatively few false positives. A clinical criterion based on the ART levels at adjacent frequencies is proposed, which further reduces the false positive rate and could also prove effective in the differential diagnosis of cochlear from retro-cochlear lesions. Author.

Sound perception induced by extracranial magnetic stimulation in deaf patients. Counter, S. A., Borg, E. Neurology Department/Biological Laboratories, Harvard University, Cambridge, Massachusetts 02138. *Scandinavian Audiology* (1992) Vol. 21 (4), pp. 239–43.
Two profoundly hard-of-hearing and deaf patients were examined by non-invasive extracranial magnetic stimluation (EMS) in an effort to determine whether EMS could evoke auditory sensations. The patients were fitted with standard earplugs and were stimulated at the auricle, the mastoid and the temporal lobe area. The threshold of auditory sensation (TAS) was determined at each stimulus position and found to be approximately 20–40 per cent of the maximum EMS level (2.0 Tesla). The TAS was generally lowest in mastoid stimulation, but was variable, and dependent on the angle and position of the stimulating coil relative to the skull. Middle-ear muscle reflex (MEMR) tests performed by EMS of the auricle, mastoid and temporal lobe area contralateral to the probe ear were negative. It was concluded that EMS of the auditory system, particularly the mastoid area, can evoke auditory sensations in cochlea-deaf ears, and that this technique deserves further study as a non-invasive procedure for evaluating potential cochlear implant patients in conjunction with electrostimulation. Author.

Speech perception in noise and BICROS hearing aids. Del-Dot, J., Hickson, L. M., O'Connell, B. Department of Speech and Hearing, University of Queensland, Brisbane, Australia. *Scandinavian Audiology* (1992) Vol. 21 (4), pp.261–4.
The speech perception in noise abilities of 14 asymmetrically hearing-impaired subjects who had been fitted with Bilateral Contralateral routing of Signal (BICROS) hearing aids was evaluated. Speech tests were administered with subjects wearing both conventional monaural amplification and their own BICROS aids. Test procedures involved the use of sentence lists from the Speech Perception in Noise (SPIN) test and the Synthetic Sentence Identification (SSI) test, presented in a background of recorded four-talker babble. The performance of the subjects was found to be significantly better with the BICROS aids than with monaural amplification alone. Author.

Endoscopic transnasal antrochoanal polypectomy: an alternative to the transantral approach. Loury, M. C., Hinkley, D. K., Wong, W. Department of Otolaryngology—head and Neck Surgery, Johns Hopkins Hospital, Baltimore, MD 21203–6402. *Southern Medical Journal* (1993) January, Vol. 86 (1), pp. 18–22.
The use of functional endoscopic sinus surgery has been limited typically to management of chronic sinusitis, nasal polyposis, and recurrent acute sinusitis. Antrochoanal polyps (ACPs) traditionally have been resected using a Caldwell-Luc sinusotomy. We used the endoscopic approach, however, in the treatment of five cases of ACP. There was recurrence in one case, but the polyp was successfully removed endoscopically. In the other four cases there has been no evidence of recurrence at a maximum follow-up of 24 months. We believe that transnasal endoscopic antrochoanal polypectomy is an excellent surgical option; there is significantly less postoperative morbidity than with the transantral approach, and rates of complete cure are similar. Author.

Microbial flora of the trachea during intubation of patients undergoing upper abdominal surgery. Dilworth, J. P., White, R. J., Brown, E. M. Department of Medicine, Frenchay hospital, Bristol. *Thorax* (1992) October, Vol. 47 (10), pp. 818–20.
BACKGROUND: The presence of Haemophilus influenzae in the oropharynx is correlated with the subsequent development of chest infection. The importance of colonization of the trachea by bacteria at the time of surgery is uncertain. This study investigated the tracheal flora at the time of intubation in 24 patients undergoing elective upper abdominal surgery. METHODS: The bacterial flora of the trachea was sampled in all 24 patients immediately after intubation and immediately before extubation. Patients were assessed postoperatively for the development of chest infection. RESULTS: Bacteria, including H influenzae in five cases, were isolated from the post-intubation brushings of the trachea of 15 patients. The pre-

extubation brushings from only four patients yielded growth. Three of five patients developing a chest infection were colonized by H influenzae according to the postintubation brush, compared with two of 19 without chest infections. Before extubation two of five developing chest infections had H influenzae in the trachea but none of 19 without infection. All but one of the patients from whom H influenzae was isolated were smokers. CONCLUSIONS: These results suggest that the increased risk of postoperative chest infection in cigarette smokers may be due in part to colonization of the trachea by H influenzae at the time of operation. Author.

Abnormal movement of the arytenoid region as a cause of upper airway obstruction. Nagai, A., Kanemura, T., Konno, K. Department of Respiratory Medicine, Tokyo Women's Medical College, Japan. *Thorax* (1992) October, Vol. 47 (10), pp. 840–1.

A 75-year-old woman presented with a three week history of severe dyspnoea and cough. Auscultation and spirometry suggested extrathoracic inspiratory airway obstruction, and bronchoscopy showed abnormal motion of the arytenoid region (supraglottic area), causing upper airway obstruction only during forced inspiratory efforts. Sedatives improved the symptoms within a week. It is suggested that reversible malfunction of the arytenoid region can be responsible for upper airway obstruction. Author.