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Abstract Selection

Interferon combined with irradiation in the treatment of operable head and neck carcinoma. A pilot study. Valavaara, R., Kortekangas, A. E., Nordman, E., Cantell, K. Department of Oncology and Radiotherapy, University of Turku, Finland. *Acta Oncologica* (1992), Vol. 31 (4), pp. 429–31.
Twenty-two patients with operable head and neck cancer were randomized to receive natural leukocyte alpha interferon (IFN) and radiotherapy, or radiotherapy alone (control) before operation. IFN was administered at 6 MU i.m. daily for four weeks and thereafter three times per week for two months. IFN treatment was introduced simultaneously with radiotherapy (2 Gy daily, five fractions per week). The preoperative dose was 30–32 Gy. Tumor response and side-effects were registered. The patients underwent radical surgery three weeks after the preoperative irradiation, followed by postoperative irradiation with 22–32 Gy. After preoperative treatment there were one complete response and four partial responses among 10 patients receiving IFN and two partial responses among 12 patients treated with irradiation alone. No difference in survival was demonstrated between the two groups. In the histologic examination of the surgical samples malignant cells were found in six of the IFN patients and in eight of the control patients. The IFN patients had considerably more pronounced mucosal radiation reactions than the controls. The accrual of patients to the study was discontinued due to the side effects. Author.

Combined radiotherapy and surgery in the treatment of neck node metastases from squamous cell carcinoma of the head and neck. Boysen, M., Lovdal, O., Natvig, K., Tausjo, J., Jacobsen, A. B., Evensen, J. F. Department of Otolaryngology, National Hospital of Norway, Oslo. *Acta Oncologica* (1992), Vol. 31 (4), pp. 455–60.
A prospectively recorded series of 107 patients with clinical neck node metastases from head and neck squamous cell carcinomas, treated in 1983–1988, and with initial local control, is evaluated. Eighty-eight patients received preoperative, and were operated 4–6 weeks after radiotherapy, and 19 received postoperative radiotherapy. Forty-four of the neck specimens in the preoperatively treated patients showed vital tumor tissue, seven with positive and 37 with negative resection margins. Nine of the latter 37 patients died due to regional recurrence. Twenty-three of the preoperatively treated patients had no palpable residual tumor following radiotherapy, but histological examination showed vital tumor tissue in five of whom two had N1 neck disease. The overall regional failure rate was 19 per cent. Eleven patients (10 per cent) died from local recurrence and 11 from distant metastases. Forty-one patients (38 per cent) are alive without evidence of disease and three (three per cent) alive with disease (mean observation time 30 months). Combined treatment is recommended for all cases of neck node metastases. Author.

Analysis of chromosome 22 deletions in neurofibromatosis type 2-related tumors. Wolff, R. K., Frazer, K. A., Jackler, R. K., Lanser, M. J., Pitts, L. H., Cox, D. R. Department of Psychiatry, University of California, San Francisco 94143–0554. *American Journal of Human Genetics* (1992) September, Vol. 51 (3), pp. 478–85.
The neurofibromatosis type 2 (NF2) gene has been hypothesized to be a recessive tumor suppressor, with mutations at the same locus on chromosome 22 that lead to NF2 also leading to sporadic tumors of the types seen in NF2. Flanking markers for this gene have previously been defined as D22S1 centromeric and D22S28 telomeric. Identification of subregions of this interval that are consistently rearranged in the NF2-related tumors would aid in better defining the disease locus. To this end, we have compared tumor and constitutional DNAs, isolated from 39 unrelated patients with sporadic and NF2-associated acoustic neuromas, meningiomas, schwannomas, and ependymomas, at eight polymorphic loci on chromosome 22. Two of the tumors studied revealed loss-of-heterozygosity patterns, which is consistent with the presence of chromosome 22 terminal deletions. By using additional polymorphic markers, the terminal deletion breakpoint found in one of the tumors, an acoustic neuroma from an NF2 patient, was mapped within the previously defined NF2 region. The breakpoint occurred between the haplotyped markers D22S41/D22S46 and D22S56. This finding redefines the proximal flanking marker and localizes the NF2 gene between markers D22S41/D22S46 and D22S28. In addition, we identified a sporadic acoustic neuroma that reveals a loss-of-heterozygosity pattern consistent with mitotic recombination or deletion and reduplication, which are mechanisms not previously seen in studies of these tumors. This finding, while inconsistent with models of tumorigenesis that invoke single deletions and their gene-dosage effects, lends further support to the recessive tumor-suppressor model. Author.

Neurofibromatosis type 2 appears to be a genetically homogeneous disease. Narod, S. A., Parry, D. M., Parboosingh, J., Lenoir, G. M., Ruttledge, M., Fischer, G., Eldridge, R., Martuza, R. L., Frontali, M., Haines, J., *et al.* McGill Centre for Human Genetics, Montreal, Quebec, Canada. *American Journal of Human Genetics* (1992) September, Vol. 51 (3), pp. 486–96.
Neurofibromatosis type 2 (NF2) is an autosomal dominant syndrome characterized by the development of vestibular schwannomas and other tumors of the nervous system, including cranial and spinal meningiomas, schwannomas, and ependymomas. The presence of bilateral vestibular schwannomas is sufficient for the diagnosis. Skin manifestations are less common than in neurofibromatosis type 1 (NF1; von Recklinghausen disease). The apparent clinical distinction between NF1 and NF2 has been confirmed at the level of the gene locus by linkage studies; the gene for NF1 maps to chromosome 17, whereas the gene for NF2 has been assigned (in a single family) to chromosome 22. To increase the precision of the genetic mapping of NF2 and to determine whether additional susceptibility loci exist, we have performed linkage analysis on 12 families with NF2 by using four polymorphic markers from chromosome 22 and a marker at the NF1 locus on chromosome 17. Our results confirm the assignment of the gene for NF2 to chromosome 22 and do not support the hypothesis of genetic heterogeneity. We believe that chromosome 22 markers can now be used for presymptomatic diagnosis in selected families. The NF2 gene is tightly linked to the D22S32 locus (maximum lod score 4.12; recombination fraction 0). A CA-repeat polymorphism at the CRYB2 locus was the most informative marker in our families (lod score 5.99), but because the observed recombination fraction between NF2 and CRYB2 was 10 cM, predictions using this marker will need to be interpreted with caution. Author.

Sinusitis in HIV-1 infection. Zurlo, J. J., Feurerstein, I. M., Lebovics, R., Lane, H. C. National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland. *American Journal of Medicine* (1992) August, Vol. 93 (2), pp. 157–62.
PURPOSE: To determine the clinical and radiographic characteristics of sinusitis in patients with human immunodeficiency virus type 1 (HIV-1) infection. PATIENTS AND METHODS: A retrospective study was performed that identified all HIV-1-infected patients with sinus radiographs, sinus computed tomograms, or magnetic resonance imaging of the head between 1982 and 1989 (n = 145). Medical record review detailed the clinical course and laboratory parameters in all patients. RESULTS: Eighty-nine patients had radiographic evidence of sinusitis; 75 patients had adequate clinical data and comprise the study group. Acute sinusitis was seen in 10 patients (13 per cent), while all 75 patients had muco-

sal thickening indicative of chronic sinusitis. Fifty patients (67 per cent) were symptomatic with fever, nasal congestion or discharge, and headache being the most common symptoms; 19 patients (25 per cent) were asymptomatic when their radiographs showed active disease. The mean CD4 count for the group was 276 cells/mm^3; 32 (43 per cent) had CD4 counts less than or equal to 100 cells/mm^3. Twenty-three patients (31 per cent) received antibiotics orally, parenterally, or both. CONCLUSIONS: Sinusitis appears to occur frequently in HIV-infected patients, is often asymptomatic, may be recurrent or refractory, and may be associated with declining immunocompetence in HIV-infected patients. Author.

Sinusitis in HIV-infected patients: a clinical and radiographic review. Godofsky, E. W., Zinreich, J., Armstrong, M., Leslie, J. M., Weikel, C. S. Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland 21205--2196. *American Journal of Medicine* (1992) August, Vol. 93 (2), pp. 163–70.
PURPOSE: To describe the clinical, radiographic, and laboratory features of sinus disease in human immunodeficiency virus (HIV)-infected individuals. PATIENTS: Seventy-two patients with a history of sinusitis identified from 1,461 consecutive admissions (667 patients) to the HIV ward at The Johns Hopkins Hospital. METHODS: Retrospective chart review. SETTING: The Johns Hopkins Hospital. RESULTS: Sinusitis was identified in 72 HIV-infected patients, predominantly individuals with a CD4 cell count of less than 200/mm^3. A history of respiratory infections such as bacterial pneumonia, bronchitis, and otitis media was common. Although nasal congestion and postnasal drainage were found in the majority of patients, symptoms of sinusitis were often non-specific and the diagnosis was incidental in 28 patients (33 per cent). Magnetic resonance imaging or computed tomography was significantly more sensitive than plain radiography (p less than 0.001) in defining the extent of the disease, particularly with posterior sinus involvement, which occurred in the majority of the patients. The number of radiologically abnormal sinuses correlated inversely with the CD4 count. Although the majority of patients responded at least partially to antibiotic therapy, only 15 per cent had complete resolution of clinical symptoms. Fifty-eight per cent of patients had clinical and/or radiographic evidence of recurrent/persistent sinus infection, and chronicity correlated with a CD4 count less than 200/mm^3 (p less than 0.001). CONCLUSIONS: Sinusitis in HIV-infected patients is common, severe, and difficult to treat. Patients with CD4 counts less than 200/mm^3 are prone to disease involving multiple sinuses that responds incompletely to antibiotic therapy, often resulting in chronic sinusitis. Unlike the immunocompetent host, the majority of the HIV-infected patients with advanced immunodeficiency develop posterior sinus disease. Author.

New mental retardation syndrome with hearing impairment, distinct facial appearance, and skeletal anomalies. Finucane, B., Kurtz, M. B., Scott, C. I., Jr. Medical Department of Elwyn, Inc., Pennsylvania 19036. *American Journal of Medical Genetics* (1992) July 15, Vol. 43 (5), pp. 844–7.
We present two unrelated children with a distinct pattern of anomalies, including mental retardation, hearing impairment, unusual facial appearance, and skeletal defects. Both children have severe behaviour disturbance and hyperactivity. The characteristic facial findings include a broad mouth, broad nasal bridge, mildly anteverted nares with a fleshly nasal tip, and deep nasolabial folds. Skeletal findings include mild to moderate short stature, dysharmonic maturation of epiphyseal ossification centres in the hands, and mild scoliosis. Author.

The study of the maxillary sinus areas in different orthodontic malocclusions. Oktay, H. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1992) August, Vol. 102 (2), pp. 143–5.
In the present study, the maxillary sinus areas have been investigated on orthopantomographs of 103 male and 86 female subjects either with ideal occlusions or with malocclusions. It has been found that malocclusions and sex factors have no effect on the size of the maxillary sinuses, and that sex is a significant factor only in Angle Class II malocclusions. The female subjects with Angle Class II malocclusions have larger maxillary sinuses than the male subjects and the other groups of female subjects. Author.

Nasopharyngeal brachytherapy with access via a transpalatal flap. Harrison, L. B., Sessions, R. B., Fass, D. E., Armstrong, J. G., Hunt, M., Spiro, R. H. Department of Radiation Oncology, Memorial Sloan-Kettering Cancer Center, New York, New York 10021. *American Journal of Surgery* (1992) August, Vol. 164 (2), pp. 173–5.
We used a posteriorly based transpalatal flap for interstitial nasopharyngeal brachytherapy in five patients with nasopharyngeal carcinoma. All of these implants were done with iodine 125 seeds. The disease in three of five patients has been controlled locally for 27, 30 and 40 months, respectively. Two patients experienced local failure and died. There have been no palatal healing problems despite high doses of previous radiation in all of our patients. No palatal incompetence has been seen. This technique appears safe and should be considered for discrete lesions of the high posterior or superior nasopharynx that cannot be approached by less invasive methods. Author.

Evaluation of risk factors for laryngeal edema after tracheal extubation in adults and its prevention by dexamethasone. A placebo-controlled, double-blind, multicenter study. Darmon, J. Y., Rauss, A., Dreyfuss, D., Bleichner, G., Elkharrat, D., Schlemmer, B., Tenaillon, A., Brun-Buisson, C., Huet, Y. Departement de Reanimation Medicale, Hopital Henri Mondor, Creteil, France. *Anesthesiology* (1992) August, Vol. 77 (2), pp. 245–51.
Because laryngeal edema (LE) after tracheal extubation is likely to result from an exudative response, corticosteroids often are given routinely as a preventive treatment. No adequate controlled study supports this strategy, however, a prospective, randomized, placebo-controlled, double-blind, multicenter trial that included 700 consecutive patients requiring tracheal intubation and mechanical ventilation was conducted to determine risk factors for LE occurrence after tracheal extubation in adults and to evaluate the efficacy of corticosteroids in its prevention. One hour before extubation, patients were given either an intravenous bolus of 8 mg dexamethasone or a placebo. Patients were divided into two groups: 1) those in whom short-duration intubation (SDI, less than 36 h) was administered; and 2) those in whom long-duration intubation (LDI, more than 36 h) was administered. Minor LE was diagnosed when either stridor or laryngeal dyspnea, or both, occurred; major LE was diagnosed when reintubation due to LE was required, with LE evidenced during direct laryngoscopy. The overall incidence of LE was 4.2 per cent and varied among the six participating centers from 2.3 to 6.9 per cent (not significant). In only seven patients (one per cent), all with LDI, was tracheal reintubation required for LE. Laryngeal edema occurred more frequently after LDI than after SDI (7.2 vs. 0.9 per cent; p less than 0.001). It also was more frequent in female than in male patients (20/284 vs. 8/379; p less than 0.05), irrespective of intubation duration and treatment. There was no association between LE and either difficulty/route of intubation or admission diagnosis. Author.

Therapeutic and prognostic considerations of head and neck melanoma. Fisher, S. R., Seigler, H. F., George, S. L. Duke University Medical Center, Durham, NC 27710. *Annals of Plastic Surgery* (1992) January, Vol. 28 (1), pp. 78–80.
Therapeutic considerations are discussed based on recurrence and survival statistics of 900 patients treated at Duke University Medical Center (Durham, NC). Approximately one-third of all patients developed recurrence. Factors affecting recurrence include tumor thickness, presence of positive regional nodes at diagnosis, and advanced Clark level. Patients with more than one adverse index had even higher rates of recurrence than with one alone. The five-year survival of all patients after recurrence was 32 per cent. Therapeutic decisions should include considerations that relate to patients' recurrence patterns and survival curves. Author.

Successful treatment of postoperative chylothorax using an external pleuroperitoneal shunt. Cummings, S. P., Wyatt, D. A., Baker, J. W., Flanagan, T. L., Spotnitz, W. D., Rodgers, B. M., Kron, I. L., Tribble, C. G. Division of Thoracic and Cardiovascular Surgery, University of Virginia School of Medicine, Charlottesville 22908. *Annals of Thoracic Surgery* (1992) August, Vol. 54 (2), pp. 276–8.
We report three patients with chylothorax who were successfully managed as outpatients using external pleuroperitoneal shunts. This external shunt has the advantage over subcutaneously placed shunts

of pumping large volumes of fluid with each compression of the pumping chamber, of not causing the discomfort associated with pumping a subcutaneous chamber, of not becoming difficult to find in the subcutaneous space, and of being constructed of larger components which do not kink or become easily clogged with fibrinous debris. Author.

Metastatic nasopharyngeal carcinoma initially presenting as cervical lymphadenopathy. A report of two cases that resembled Hodgkin's disease. Zarate-Osorno, A., Jaffe, E. S., Medeiros, L. J. Hematopathology Section, National Cancer Institute, Bethesda, MD 20892. *Archives of Pathology and Laboratory Medicine* (1992) August, Vol. 116 (8), pp. 862–5.
We describe two patients with nasopharyngeal carcinoma who initially presented with cervical lymphadenopathy. Lymph node biopsy specimens in each patient were initially diagnosed as Hodgkin's disease. In both cases the neoplastic cells had large, vesicular nuclei with prominent eosinophilic nucleoli; some neoplastic cells were identified in lacunar spaces. In addition, numerous inflammatory cells were present, including eosinophils, lymphocytes, and plasma cells. At the time of referral, the correct diagnosis of metastatic carcinoma was made, and primary nasopharyngeal carcinomas were subsequently identified. The possibility of metastatic nasopharyngeal carcinoma should always be considered in adults with enlarged cervical lymph nodes that resemble Hodgkin's disease. The cytologic features of the malignant cells are the clue to the correct diagnosis. Immunophenotypic studies easily resolve this diagnostic dilemma if the possibility of metastatic nasopharyngeal carcinoma is considered. Author.

Diagnosis of middle ear disease with eardrum perforation by a newly developed sweep frequency measuring apparatus. Wada, H., Kobayashi, T., Tachizaki, H. Department of Mechanical Engineering, Tohoku University, Sendai, Japan. *Audiology* (1992), Vol. 31 (3), pp. 132–9.
Dynamic characteristics of an artificial middle ear model with and without eardrum perforations were measured with our newly developed sweep frequency measuring apparatus. Then, the dynamic characteristics of patients with chronic otitis media having eardrum perforations and with traumatic perforations were measured with this apparatus, and the results were compared with those of the artificial middle ear model with an eardrum perforation. The comparison leads to the conclusion that the middle ear condition of patients with eardrum perforations can be distinguished on the basis of their measurement results. Furthermore, the ossicular chain conditions of patients with eardrum perforations can be diagnosed after putting a paper patch on the eardrum perforation. Therefore, this apparatus seems to be highly useful in the diagnosis of both ossicular chain disorders and eardrum perforations. Author.

Radiological features during and following treatment of spinal tuberculosis. Boxer, D. I., Pratt, C., Hine, A. L., McNichol, M. Department of Radiology, Central Middlesex Hospital NHS Trust, London, UK. *British Journal of Radiology* (1992) June, Vol. 65 (774), pp. 476–9.
A retrospective study was performed in order to document the sequence and time scale of radiological changes occuring during the healing of spinal tuberculosis. Twenty-eight episodes occurred in 26 patients, of whom only two were Caucasian. All demonstrated good response to conventional chemotherapy. Soft-tissue masses increased in size for up to 1.5 months and took about 12 months to resolve. Bone destruction was seen in all cases and progressed in 70 per cent of patients, whilst on treatment. There was loss of vertebral body height in 79 per cent, which progressed for up to 14 months; any recovery of height was a very late feature. Sclerosis was seen at presentation in 52 per cent and developed in most of the remaining patients within five months of instigating treatment. It progressed for up to 14 months and took, on average, 31 months to return to normal. Reduction in disc height was commonly seen and the vertebrae fused in three-quarters of those affected, the time of onset of fusion being very variable. To manage patients with spinal tuberculosis, an appreciation of the variability of radiological changes that can occur during treatment is necessary. Author.

Abdominal aortic aneurysm, glaucoma and deafness: a new familial syndrome. Adoki, I. I., Stoodley, B. J. Department of Surgery, District General Hospital, Eastbourne, UK. *British Journal of Surgery* (1992) July, Vol. 79 (7), pp. 637–8.
Several reports have suggested a genetic basis for the distribution of abdominal aortic aneurysm (AAA) in some families. The familial clustering of this disease is further demonstrated in this report of ten siblings, five of whom have confirmed AAA. This is the largest cluster so far reported. The majority of patients in this family group also have glaucoma and/or deafness. Author.

Multiple primary cancers in Hong Kong Chinese patients with squamous cell cancer of the head or neck. Choy, A. T., van Hasselt, C. A., Chisholm, E. M., Williams, S. R., King, W. W., Li, A. K. Department of Surgery, Chinese University of Hong Kong, Prince of Wales Hospital, Shatin. *Cancer* (1992) August 15, Vol. 70 (4), pp. 815–20.
BACKGROUND: The risk of multiple primary tumors in the head and neck area is higher than that in other areas of the body. METHODS. A total of 573 patients with squamous cell carcinoma of the head or neck were studied prospectively during a 4.5 year period to determine the incidence of associated synchronous and metachronous second primary carcinoma. RESULTS. Multiple primary carcinoma was found in 2.4 per cent of these patients (69 per cent with synchronous primary tumors). Sixty-three per cent of all second primary tumors occurred in the esophagus. CONCLUSIONS. This report emphasizes the importance of esophagoscopy in the initial assessment of patients with squamous cell carcinoma of the head or neck. Author.

Mental neuropathy (numb chin syndrome). A harbinger of tumor progression or relapse. Burt, R. K., Sharfman, W. H., Karp, B. I., Wilson, W. H. Clinical Oncology Program, National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20892. *Cancer* (1992) August 15, Vol. 70 (4), pp. 877–81.
The authors report four patients whose initial symptom of tumor recurrence or progression was unilateral numbness of the chin. Two patients had Hodgkin lymphoma, one had malignant melanoma, and one had prostate cancer. Physical examination was notable only for unilateral anesthesia of the chin and lower lip. Diagnostic evaluation, including computed tomography (CT) scan and magnetic resonance imaging (MRI) of the brain, plain radiographs of the mandible, and cerebrospinal fluid analysis for protein, glucose, and cytology were normal. Bone scans revealed osseous lesions in the axial skeleton of all patients, whereas only two patients had abnormal uptake in the mandible. The authors conclude that in the setting of a negative evaluation for central nervous system (CNS) or local mandibular disease, mental neuropathy is associated with recurrent or progressive skeletal disease. In addition, to document relapsed or progressive cancer, the skeletal system may have to be examined at sites distant from the mandible. Author.

Increase in translaryngeal resistance during phonation in rheumatoid arthritis. Blosser, S., Wigley, F. M., Wise, R. A. Division of Pulmonary and Critical Care Medicine, Johns Hopkins Asthma and Allergy Centre, Baltimore 21224. *Chest* (1992) August, Vol. 102 (2), pp. 3878–90.
Laryngeal involvement by RA is a common finding, but there have been no studies of laryngeal function in RA patients. This study was undertaken to determine if patients with rheumatoid arthritis have functional abnormalities of the upper airway during phonation which may be the result of synovitis of the laryngeal joints caused by RA. Translaryngeal resistance was measured in six patients with RA and six matched control subjects using an interrupter method to measure PSG and V during vocalization. Patients with RA had a higher R (65.0 ± 8.15 cm H20/L/s) than control subjects (38.4 ± 7.43 cm H20/L/s (p less than 0.05)). This was the consequence of lower V rates during phonation at similar PSG. We conclude that abnormalities of the larynx in RA patients are common and cause measurable physiologic abnormalities. Author.

The thermally injured ear: a systematic approach to reconstruction. Rosenthal, J. S. Department of Surgery, Bridgeport Hospital, Connecticut. *Clinics in Plastic Surgery* (1992) July, Vol. 19 (3), pp. 645–61.
The ears are special and unique structures that ordinarily are ignored

during our daily routines. A thermal injury of relatively moderate proportions can irreparably alter their shape and appearance. Many reconstructive techniques have been garnered to restore these delicate structures. Herculean efforts will consistently fall short of these goals if tissue preservation is not in the forefront of our treatment protocol. Iontophoresis coupled with topical antimicrobial agents have been shown to ameliorate cartilage loss, allowing for delayed operative intervention, when more consistent results may be obtained. Early radical resection of ear soft tissue or structural cartilage should be an endeavour of last resort in all but a few instances, such as unresponsive suppurative chondritis. Segmental restoration of the injured ear allows for dismantling of the various parts to recreate the whole. A facsimile of the original is possible if the major visible distinguishing landmarks are salvaged. Flap resurfacing of exposed cartilage yields closer tissue match, color, and texture, and it affords a greater proclivity for survival than does graft closure. Sacrifice of the helical lip relegates the ear to that of a flat, less-than-optimal appearance. Tissue expansion coupled with cutaneous flap closure will usually preclude this situation. Skin grafting is a valuable tool in our armamentarium but should be used judiciously in situations where graft coverage is either necessary or desired to produce enhanced results. In such instances, the thickness of the graft must be considered, ranging from an almost translucent quality for the antihelix to that of a much thicker graft for the helix. Application and direction of the graft will be determined by the underlying surface contours. Until the reconstruction has been completed, burn patients and their families usually do not view the injured ear that has been snatched from the fires of adversity. The unveiling frequently effects a felicitous atmosphere, because they perceive a relatively normal-looking ear. The final result is all that matters. Author.

Brainstem auditory evoked potentials in familial dysautonomia. Lahat, E., Aladjem, M., Mor, A., Azizi, E., Arlazarof, A. Paediatric Neurology Clinic, Assaf Harofeh Medical Centre, Zerifin, Israel. *Developmental Medicine and Child Neurology* (1992) August, Vol. 34 (8), pp. 690–3.
The brainstem function of eight children with familial dysautonomia was investigated by brainstem auditory evoked potentials and compared with that of age-matched healthy control children. All median latencies of waves III and V in the study group were significantly higher than those of the control children. Brain transmission times of waves I–III and I–V were significantly prolonged in the study group compared with the control group. These results provide additional objective support for the assumption that the brainstem function of children with familial dysautonomia is affected by this disease. Author.

Contralateral effects of cerebello-pontine angle exposure on human auditory brain-stem evoked potentials. Pratt, H., Martin, W. H., Schwegler, J. W. Garfield Auditory Research Laboratory, Department of Otorhinolaryngology and Bronchoesophagology, Temple University Medical School, Philadelphia, PA 19140. *Electroencephalography and Clinical Neurophysiology* (1992) August, Vol. 83 (2), pp. 153–61.
Auditory brain-stem evoked potentials (ABEPs) were recorded during surgical procedures which exposed the cerebello-pontine angle (CPA) in humans. Recordings made with the CPA contralateral to stimulus exposed were compared with those obtained with the skin sutured at the end of surgery. Single-channel as well as three-channel Lissajous' trajectory (3-CLT) analyses were used to evaluate the effect of the surgical exposure on ABEP. The results suggest that exposure of the CPA contralateral to the stimulated ear did not affect dipole equivalent orientation nor magnitude, but did affect timing of the recorded activity being more pronounced for segments 'd'–'e' (corresponding to waves IV–V) than for 'a'–'b' (waves I–II). The results imply that the effects of disrupting the volume conductor may have been overwhelmed by other effects, such as local temperature changes. These changes, although not associated with clinical sequella, should be accounted for when analyzing subtle quantitative changes involving surgical exposures. Author.

***Deposition and dispersion of aerosols in the airways of the* human respiratory tract: the effect of particle size.** Scheuch, G., Stahlhofen, W. GSF Forschungszentrum fur Umwelt- und Gesundheit, Institut fur Biophysikalische Strahlenforschung, Frankfurt/Main, Germany. Experimental Lung Research (1992) May–June, Vol. 18 (3), pp. 343–58.
Small volumes of aerosols (boluses) were inspired predominantly into the conducting airways of human lungs with a fast operating valve system, injecting preselected aerosol volumes near the end of a clean air inhalation. Particle recovery and bolus dispersion in the exhaled air after various periods of breathholding were investigated by measuring aerosol number concentration directly in front of the mouth with a laser photometer. Inspired and expired flow rates were measured with a pneumotachograph. The effect of particle size on these measurements has been investigated using aerosol particles with aerodynamic diameters (dae) between 0.9 and 5 microns. For aerosol particles smaller than 2 microns, bolus dispersion increases with increasing periods of breathholding (tb). After reaching a maximum, dispersion decreases with even longer tb. An increase in particle size yields a smaller increase in dispersion during the first seconds of breathholding while it is not changed significantly without breathhold. Particle losses during inhalation and exhalation increases with particle size. However, with increasing periods of breathholding, the losses of the smaller particles (less than 1.5 microns) were found to be much higher than expected theoretically, implying particle losses by sedimentation in the same airway structures. The small aerosol particles are deposited in smaller airways than bigger particles. These observations can be explained by cardiogenic mixing during periods of breathholding by pulsatile flow oscillations and confirm measurements with enhanced heart rate as described in an earlier paper. Small particles with restricted settling velocities remained longer in an airborne state in the airways and this leads to a more efficient cardiogenic mixing. Author.

Estrogen influences auditory brainstem responses during the normal menstrual cycle. Elkind-Hirsch, K. E., Stoner, W. R., Stach, B. A., Jerger, J. F. Department of Otorhinolaryngology, Methodist Hospital, Baylor College of Medicine, Houston, TX 77030. *Hearing Research* (1992) July, Vol. 60 (2), pp. 143–8.
We evaluated the impact of the menstrual cycle on auditory brainstem response (ABR) latency in nine normally cycling women. Subjects (age 23–40 years) using no hormonal therapy were recruited and underwent ABR testing during four different phases of the same menstrual cycle: early follicular (cycle days 1 to 3); mid-cycle (cycle days 12 to 15); mid-luteal (cycle days 17 to 22), and premenstrual (cycle days 25–27). Cycles were verified by basal body temperature, and serum estrogen (E2), progesterone (P), and gonadotropin levels. A control group of nine women (age 23–40 years) on oral contraceptives (Nordette-28) was also studied four times during a pill cycle. Results show a significant increase in the latency of wave III and wave V peak latencies and in the I–V interpeak interval associated with a high estrogen state at the mid-cycle phase. No statistically significant variations in latency were found in the birth control pill group. These data suggest the existence of brainstem auditory neural pathways that are sensitive to fluctuations in E2 levels during the menstrual cycle. Author.

Incidence of temporomandibular joint symptoms following whiplash injury. Heise, A. P., Laskin, D. M., Gervin, A. S. Medical College of Virginia, Richmond 23298–0566. *Journal of Oral and Maxillofacial Surgery* (1992) August, Vol. 50 (8), pp. 825–8.
Recently there has been considerable litigation involving the development of temporomandibular joint (TMJ) pain and dysfunction following cervical musculoskeletal injury (whiplash). The purpose of this investigation was to interview, examine, and follow up patients with a diagnosis of whiplash injury to determine the incidence of associated temporomandibular disorders. Patients were divided into two categories: those with and those without radiologic evidence of cervical skeletal injury. In the 63 patients with radiographic evidence of cervical skeletal injury (group 1), none had clicking at the time of initial examination. In the 92 patients without positive radiographs (group 2), only one had clicking. At one month follow-up by telephone, two of 51 available patients in group 1 had developed clicking, but no new TMJ symptoms were reported by the 78 patients in group 2 contacted by phone. Seventy per cent of the initial follow-up group (44 patients) with radiographic evidence of injury were contacted by telephone at one year and none reported new symptoms of TMJ pain or clicking. Sixty-five per cent of the initial follow-up group without radiographic evidence of injury (60 patients) were interviewed and also reported no new TMJ symptoms. These data indicate that the incidence of TMJ pain and clicking following whiplash injury is extremely low, and that patients who do not have clicking on resolution of their initial pain/dysfunction subsequently do not develop this problem. Author.

Donor site morbidity of greater auricular nerve graft harvesting. Schultz, J. D., Dodson, T. B., Meyer, R. A. Division of Oral and Maxillofacial Surgery, Emory University School of Medicine, Atlanta, GA 30322. *Journal of Oral and Maxillofacial Surgery* (1992) August, Vol. 50 (8), pp. 803–5.
To better understand the risks of obtaining greater auricular nerve (GAN) grafts, a retrospective analysis of 29 patients who underwent GAN graft procurement between 1985 and 1990 was conducted. No short-term morbidity was noted. Thirteen patients developed symptomatic nerve injuries, of which six reported spontaneous resolution in an average of 4.6 months. Three patients developed neuromas and one formed a hypertrophic scar. Persistent nerve injury symptoms were well tolerated in all but one patient, who developed sympathetic-mediated pain. Author.

Titration of immunotherapy by periodical nasal allergic challenges in the treatment of allergic rhinitis (see comments). Clarke, P. S. Royal Hobart Hospital, Qld., Australia. *Medical Journal of Australia* (1992) July 6, Vol. 157 (1), pp. 11–3. Comment in: *Medical Journal of Australia* (1992) July 6; **157(1):** 9–11.
OBJECTIVE: To determine the benefits of nasal allergen challenge (NAC) in monitoring immunotherapy for allergic rhinitis in a clinical setting. DESIGN: 200 consecutive courses of immunotherapy, with pyridine-extracted alum-precipitated allergen extracts (Allpyral), were personally carried out by the writer and analysed. Diagnosis before treatment was confirmed by NAC and the duration of treatment determined by periodical NAC. SETTING: Consultant allergist's clinical practice. PARTICIPANTS: Patients with allergic rhinitis who were referred for treatment; 79 patients were allergic to grass, 70 to the house dust mite, 30 to plantain and 21 to miscellaneous allergens. RESULTS: The mean protein nitrogen units (pnu) required to reverse an NAC was 145,467 pnu for grass, 93,771 pnu for mite, 103,137 pnu for plantain, and 121,030 pnu for miscellaneous allergen patients. The range of injections to obtain conversion to a negative NAC was wide. For grass it was 9–58 injections, for mite 6–47 injections, for plantain 4–39 injections, and for miscellaneous allergens 10–79 injections. Ten grass-sensitive patients who received an average of 477,807 pnu failed to convert to a negative NAC result. Similarly, two mite-sensitive patients who received 467,370 pnu, and one plantain-sensitive patient, one cat-sensitive patient and one horse-sensitive patient, who had 389,240 pnu, 148,520 pnu and 719,540 pnu respectively, failed to convert. One patient who was very sensitive to grass pollen developed urticaria which required an injection of adrenaline. CONCLUSION: Immunotherapy for allergic rhinitis with Allpyral is effective—as determined by the conversion of NAC results from positive to negative—providing a sufficient dose is given. The manufacturer's recommended dose is inadequate. The procedure is safe for mite, plantain and miscellaneous allergens, and only one reaction occurred with grass given in a high dosage protocol, which has subsequently been altered. Considering that the British Committee of Safety of Medicines reported no deaths from Allpyral injections, its recommendations appear over cautious for this make of extract. Author.

Otitis media in children born to human immunodeficiency virus-infected mothers. Barnett, E. D., Klein, J. O., Pelton, S. I., Luginbuhl, L. M. Department of Pediatrics, Boston University School of Medicine, MA. *Pediatric Infectious Diseases Journal* (1992) May, Vol. 11 (5), pp. 360–4.
Acute otitis media (AOM) is thought to occur frequently in children infected with human immunodeficiency virus (HIV). We compared experience with AOM of 28 HIV-infected children with that of 33 children who seroreverted to HIV antibody negative status by age 18 months. The mean number of episodes/year of AOM for children who seroreverted decreased from 1.33 in the first year of life to 0.13 in the third year, whereas the mean number of episodes/year in HIV-infected children increased from 1.89 to 2.40. By age three years, all HIV-infected children had experienced one or more episodes of AOM, and 80 per cent had experienced six or more, whereas 75 per cent of children who seroreverted had experienced one or more episodes, and none had had six or more. HIV-infected children with normal T4 lymphocyte counts had a mean of 1.18 episodes of AOM in the first year of life compared with 2.35 episodes in HIV-infected children with decreased counts ($P = 0.023$). HIV-infected children with low counts had a nearly three-fold increased risk of recurrent AOM (47 per cent vs. 18 per cent). Author.

Passive smoking and middle ear effusion among children in day care. Etzel, R. A., Pattishall, E. N., Haley, N. J., Fletcher, R. H., Henderson, F. W. Robert Wood Johnson Clinical Scholars Program, University of North Carolina, Chapel Hill. *Pediatrics* (1992) August, Vol. 90 (2 Pt. 1), pp. 228–32.
One hundred and thirty-two children who attended a research day-care centre were studied to determine whether passive tobacco smoke exposure was associated with an increased rate of otitis media with effusion or with an increased number of days with otitis media with effusion during the first three years of life. Based on preliminary studies, a serum cotinine concentration of greater than or equal to 2.5 ng/ml was considered indicative of exposure to tobacco smoke. Otitis media with effusion was diagnosed using pneumatic otoscopy by nurse practitioners and pediatricians who reviewed the children's health status each weekday. The 87 children with serum cotinine concentrations greater than or equal to 2.5 ng/mL had a 38 per cent higher rate of new episodes of otitis media with effusion during the first three years of life than the 45 children with lower or undetectable serum cotinine concentrations (incidence density ratio = 1.38, 95 per cent confidence interval 1.21 to 1.56). The average duration of an episode of otitis media with effusion was 28 days in the children with elevated cotinine concentrations and 19 days in the children with lower cotinine concentrations (P less than 0.01). It is estimated that 8 per cent of the cases of otitis media with effusion in this population and 17.6 per cent of the days with otitis media with effusion may be attributable to exposure to tobacco smoke. Author.

Stridor and upper airway obstruction in infants and children. John, S. D., Swischuk, L. E. Department of Radiology, University of Texas Medical Branch, Galveston 77550. *Radiographics* (1992) July, Vol. 12 (4), pp. 625–43; discussion 644.
Upper airway obstruction in infants and children is a common and distressing problem because of the relatively narrow diameter of the airway in early life. Although ultrasound, computed tomography, and magnetic resonance imaging have become increasingly popular modalities for use in many pediatric diseases, plain radiography and fluoroscopy, with attention to technique, collimation, and patient position, continue to be the mainstays for the evaluation of stridor in children. An understanding of normal airway anatomy and air flow dynamics is necessary for this evaluation. This article presents the diagnostic features of conditions a radiologist may encounter in an infant or child with upper airway obstruction. Plain radiographic and fluoroscopic findings from over 100 cases of infants and children with this condition were reviewed to determine how frequently the specific diagnosis was confirmed with these studies. In the vast majority of cases, plain radiography and fluoroscopy suffice. Author.

Auditory and psychological factors in 'auditory disability with normal hearing'. King, K., Stephens, D. Department of Psychology, University of Wales, College of Cardiff. *Scandinavian Audiology* (1992), Vol. 21 (2), pp. 109–14.
Patients who have 'Auditory Disability with Normal Hearing' (ADN) complain of hearing difficulties even although their hearing is audiometrically 'normal'. The auditory and psychological factors involved in ADN have been investigated by comparing 20 patients of employment age with 20 controls (matched for age, sex and socio-economic group) on appropriate auditory tests and questionnaires. From the results it was concluded that both auditory and psychological factors are involved in ADN. The principal finding was that as a result of their problems with discriminating speech in noise, individuals with ADN have a tendency to anxiety, depression and loneliness. In addition the otological history of an individual was found to be important in the development of ADN. Finally, it was suggested that bad coping strategies may lead to increased anxiety in those with ADN. Author.

Models for studying the progression of hearing loss caused by noise. Ivarsson, A., Bennrup, S., Toremalm, N. G. Occupational Audiology Centre, University of Lund, Ideon-Malmo, Sweden. *Scandinavian Audiology* (1992), Vol. 21 (2), pp. 79–86.
A computer-controlled fixed-frequency Bekesy audiometer has been used together with simplified mathematical models for hearing threshold measurements and analysis in 1,796 subjects from seven different noise environments with exposures varying from less than 80 dB(A) to greater than 95 dB(A). The methods of measurement

and analysis have been used to determine hearing loss caused by noise for various age groups for men and women. It has also been possible to estimate the equivalent noise level to which workers are nowadays subjected under hearing protectors and the reduction in exposure level over the past 40 years. The results illustrate the effects of noise-reduction measures and the use of hearing protectors on the development of hearing loss suffered by workers in the actual Swedish industries. Author.

Cryptococcosis of the larynx in a patient with AIDS: an unusual cause of fungal laryngitis. Browning, D. G., Schwartz, D. A., Jurado, R. L. Department of Surgery, Emory University School of Medicine, Atlanta, Ga. *Southern Medical Journal* (1992) July, Vol. 85 (7), pp. 762–4.
We have presented a case of unsuspected cryptococcal laryngitis, clinically masquerading as Kaposi's sarcoma in a patient with AIDS. The spectrum of laryngeal disease in AIDS patients includes a variety of infections and neoplasms, which can be treated satisfactorily when accurate and timely diagnosis is made. Author.

Atlantoaxial lateral mass osteoarthritis. A frequently overlooked cause of severe occipitocervical pain. Star, M. J., Curd, J. G., Thorne, R. P. Division of Orthopaedic Surgery, Scripps Clinic and Research Foundation, La Jolla, California. *Spine* (1992) June, Vol. 17 (6 Suppl), pp. S71–6.
Localized C1–C2 lateral mass osteoarthritis is a degenerative disorder of the upper cervical spine that has a natural history markedly different from that of degenerative afflictions of the lower cervical spine. Atlantoaxial lateral mass arthritis is a distinct cause of occasionally severe occipitocervical pain in elderly persons. In this series, the diagnosis was suggested by the medical history of nine elderly patients who presented with severe occipitocervical pain (frequently diagnosed as occipital neuralgia). Physical examination demonstrated marked restriction of rotation of the cervical spine to the affected side, and localized tenderness unilaterally at the occipitocervical junction. The diagnosis was confirmed by plain radiographs of the C1–C2 articulation (open-mouth view), demonstrating marked, usually unilateral joint-space narrowing, osteophyte formation, and subchondral sclerosis. Bone scanning demonstrated focal uptake unilaterally at the occipitocervical junction. Additional imaging studies, including computed tomography, magnetic resonance imaging, or cervical myelogram, were performed to rule out coexisting intraspinal pathology. Conservative treatment was usually successful; however, C1–C2 arthrodesis was successful for severe occipitocervical pain due to atlantoaxial lateral mass arthritis not responsive to conservative treatment. Author.

Changes in isometric strength and range of motion of the isolated cervical spine after eight weeks of clinical rehabilitation. Highland, T. R., Dreisinger, T. E., Vie, L. L., Russell, G. S. Columbia Spine Center, Missouri. *Spine* (1992) June, Vol. 17 (6 Suppl), pp. S77–82.
There have been no reports in the literature objectively measuring changes in strength and range of motion in patients with non-spinal cord injuries of the cervical spine. Ninety patients participated in an eight-week training study. Diagnostic groups included patients with the following: degenerative disc (n = 6), herniated disc (n = 14), and cervical strain (n = 70). Full-range isometric strength tests were performed at eight equidistant positions in a device that constrained all motion with the exception of cervical flexion and extension. Post tests were performed following training. Significant gains were seen in strength as well as range of motion. Perceived pain was significantly reduced. This kind of testing can potentially provide the clinician with objective findings to direct patient management more adequately. Author.

Pain relief and respiratory mechanics during continuous intrapleural bupivacaine administration after thoracotomy. Inderbitzi, R., Flueckiger, K., Ris, H. B. Department of Thoracic and Cardiovascular Surgery, University of Berne, Switzerland. *Thoracic and Cardiovascular Surgery* (1992) April, Vol. 40 (2), pp. 87–9.
Continuous intrapleural bupivacaine administration was assessed in a randomized double-blind manner with respect to its analgesic effect and its impact on breathing after thoracotomy. The pleural cavity was infused continuously for 48 hours in 24 patients following thoracotomy for pulmonary resection. Twelve patients received 10 ml/h of bupivacaine hydrochloride 0.5 per cent solution, and 12 patients 10 ml/h NaCl 0.9 per cent solution. There were no differences in the patients' characteristics, extent of surgery, mode and duration of general anaesthesia. There were no complications related either to the catheter or to bupivacaine. The amount of postoperative opioid, given on request, was used to assess the effect of bupivacaine administration on pain relief. Post-thoracotomy breathing was assessed by measuring the forced vital capacity (VC) prior to and after physiotherapy. The VC values measured 24 h, 36 h and 48 h after the operation were similar in both groups of patients with or without bupivacaine administration (p greater than 0.05). Patients given bupivacaine required significantly less opioid analgesia than those who received NaCl 0.9 per cent at 24 h (p less than 0.001), 36 h (p less than 0.001) and 48 h (p less than 0.01) after the operation. Continuous intrapleural bupivacaine analgesia through a paravertebral catheter positioned in the paravertebral groove is safe and provides efficient pain relief after thoracotomy. Author.