

Abstract Selection

BAEP changes in Leber's hereditary optic atrophy: further confirmation of multisystem involvement. Mondelli, M., Rossi, A., Scarpini, C., Dotti, M. T., Federico, A. Institute of Neurological Sciences, University of Siena, Italy. *Acta Neurologica Scandinavica* (1990) Apr, Vol. 81 (4), pp. 349-53.

A neurophysiological study of 11 patients belonging to five families affected by Leber's hereditary optic atrophy is reported. Electromyography, nerve conduction velocities and somatosensory evoked potentials were normal. Visual evoked potentials were absent or delayed, desynchronized and reduced in amplitude. Brainstem auditory evoked potentials were anomalous in 64 per cent of subjects all without hearing defects. These changes which have never before been reported, confirm multisystem involvement in this disease. Author.

Auditory dysfunction caused by multiple sclerosis: detection with MR imaging. Cure, J. K., Cromwell, L. D., Case, J. L., Johnson, G. D., Musiek, F. E. Department of Radiology, Dartmouth-Hitchcock Medical Center, Hanover, NH 03756. *American Journal of Neuro-Radiology* (1990) Jul-Aug, Vol. 11 (4), pp. 817-20.

We reviewed the MR examinations of 167 patients who presented over a 3-year period with a chief symptom of hearing loss and/or tinnitus. In 14 of these patients the only MR abnormality was the presence of multiple parenchymal high-signal foci on T2-weighted images. Nine of the 14 had clinical evidence of multiple sclerosis; the remaining five had no clinical evidence of multiple sclerosis. Lesions in the auditory pathways, potentially responsible for the patients' symptoms, were identified in only five cases. We recommend T2-weighted images of the whole brain in addition to T1-weighted images of the internal auditory canals and cerebellopontine angles in patients with hearing loss. In some patients, lesions found at higher levels in the periventricular white matter may provide the only clue to the origin of auditory abnormalities. Author.

Comparative evaluation of visual, somatosensory, and auditory evoked potentials in the detection of subclinical hepatic encephalopathy in patients with nonalcoholic cirrhosis. Mehndiratta, M. M., Sood, G. K., Sarin, S. K., Gupta, M. Department of Neurology, G. B. Pant Hospital, New Delhi, India. *American Journal of Gastroenterology* (1990) Jul, Vol. 85 (7), pp. 799-803.

To objectively determine the incidence of subclinical hepatic encephalopathy (SHE) and the relative sensitivity of different evoked potentials for its detection, 22 nonalcoholic cirrhotics without clinically detectable neurological abnormality and an equal number of matched healthy controls were studied. Of the three evoked potentials, visual evoked potential (VEP) studied by the pattern shift reversal method was not found to be abnormal in any patient. Short latency somatosensory evoked potential (SSEP) was abnormal in one (4.5 per cent) and brain stem auditory evoked potential (BAEP) in nine (41 per cent) patients. There was little advantage of performing both BAEP and SSEP in a patient, since the two together were abnormal in 10 (45.5 per cent) patients, with SSEP adding only one more patient. Interpeak latencies I-III, III-V, and I-V in BAEP test were found to be the most sensitive parameters for the detection of SHE. Our results argue in favor of BAEP as the single investigation of choice for the objective assessment of SHE in patients with cirrhosis of the liver. Author.

Basaloid squamous carcinoma of the upper aerodigestive tract. Clinicopathologic and DNA flow cytometric analysis. Luna, M. A., el Naggari, A., Parichatikanond, P., Weber, R. S., Batsakis, J. G. Department of Pathology, University of Texas, M.D. Anderson Cancer Center, Houston. *Cancer* (1990) Aug 1, Vol. 66 (3), pp. 537-42.

This report adds nine basaloid squamous carcinomas (BSC) of the upper aerodigestive tract to the 11 already recorded in the literature. It includes the first flow cytometric analysis of their DNA content and compares the clinical behavior of BSC with conven-

tional squamous cell carcinoma (SCC). An uncommon variant of squamous carcinoma, BSC manifests a predilection for the hypopharynx and base of tongue of men in the sixth decade of life. Histologically, the carcinoma is characterized by a basaloid pattern often in an intimate association with focal squamous differentiation, comedonecrosis, and stromal hyalinization. It is an aggressive neoplasm: seven of the nine patients had metastases to cervical lymph nodes at time of initial surgery and three of the five deaths occurred within 24 months after primary surgery followed by radiotherapy. Its aggressiveness notwithstanding, the biologic course of BSC is similar to that of conventional SCC when clinical stage, site, and treatment are matched. Patients with aneuploid BSC had a better mean survival time (39.5 months) than those with diploid carcinomas (16.3 months). Surgery followed by radiotherapy appears to be the treatment of choice. Because of a high incidence of distant metastases, adjuvant chemotherapy may be warranted. Author.

General anesthesia does not alter the viscoelastic or transport properties of human respiratory mucus. Rubin, B. K., Finegan, B., Ramirez, O., King, M. University of Alberta, Department of Pediatrics (Pulmonary), Edmonton, Canada. *Chest* (1990) Jul, Vol. 98 (1), pp. 101-4.

Observations that mucus transport rates (MTR) are depressed in anesthetized animals and humans have led to speculation that general anesthesia depresses ciliary activity or adversely alters the physical properties of the respiratory mucus (RM). We investigated the possibility that anesthesia changes the physical properties of RM in such a way as to depress ciliary transport. We collected 33 samples of RM from the endotracheal tubes (ETTs) of 25 people aged one to 79 years undergoing elective surgery who had no clinical evidence of lung disease. We measured the rigidity, viscoelasticity, spinnability, and the percentage of solid composition of these specimens as well as the transport of the collected RM across the mucus-depleted frog palate. These physical properties were not significantly different from RM collected from awake volunteers using the bronchoscopy brush collection technique. Differences in spinnability, transportability, and solid content of paired mucus samples from the inside and outside of the ETTs are suggestive of altered RM hydration, but this requires further study. The decrease in MTR during general anesthesia is probably due to mechanisms other than alterations in the physical properties of mucus. Author.

Upper airway distensibility and collapsibility in patients with obstructive sleep apnea. Shepard, J. W. Jr., Garrison, M., Vas, W. Sleep Disorders Center, Mayo Clinic, Rochester, MN 55905. *Chest* 1990 Jul, Vol. 98 (1), pp. 84-91.

The present study was performed to evaluate the distensibility and collapsibility characteristics of regional segments of the UA in patients with OSA and in normal subjects in response to changes in airway pressure. Seventeen male patients with moderately severe OSA and 13 normal subjects underwent CT of the UA in the supine position while awake. Axial views were obtained from the level of the hard palate to the hypopharynx under conditions of -5, 0, and +10 cm H₂O of CAP. The results indicated that the *Amin* occurred within 20 mm of the hard palate in the retropalatal region of the UA in 16 (94 per cent) of the 17 patients and in 12 (92 per cent) of the 13 normal subjects. Continuous negative airway pressure of -5 cm H₂O failed to significantly decrease either *Amin* or *Amean* in either the patients or normal subjects, suggesting good UA load compensation during wakefulness. Continuous positive airway pressure of 10 cm H₂O significantly increased *Amin* and *Amean* to a similar extent in both groups. The *Amin* was significantly smaller by 40 per cent, 33 per cent, and 37 per cent in the patients with OSA, compared to the normal subjects at -5, 0, and +10 cm H₂O of CAP, respectively. In contrast, *Amean* did not differ between the groups. The CT scan criterion of *Amin* less than or greater than

1.0 cm² during tidal ventilation of atmospheric pressure correctly categorized patients with OSA and normal subjects with an accuracy of 70 per cent. While the behavior of the UA in response to nasal CPAP and CNAP failed to increase the accuracy of CT scan criteria to a level sufficient for clinical use in the diagnosis of OSA, the results clearly indicate that structural changes in the UA contribute to the development of OSA. Author.

Long-term impairments of brain and auditory functions of children recovered from purulent meningitis. Jiang, Z. D., Liu, X. Y., Wu, Y. Y., Zheng, M. S., Liu, H. C. Department of Child Health, Children's Hospital, Shanghai Medical University, P.R.C. *Developmental Medicine and Child Neurology* (1990) Jun, Vol. 32 (6), pp. 473–80.

Sixty children who had recovered from purulent meningitis one to six years earlier were investigated for long-term impairment of brain and auditory function, using brainstem auditory evoked potentials (BAEP) and developmental screening tests. Neurological and/or audiological BAEP abnormalities were found in 23 per cent of the children: 15 per cent had mild brainstem impairment and 12 per cent had hearing dysfunction. Developmental screening tests were administered to 46 children, of whom 61 per cent had normal, 22 per cent questionable and 17 per cent abnormal results. The results of the BAEP significantly correlated with those of the developmental screening tests, suggesting that the neuropsychological development of children with BAEP abnormalities was significantly delayed compared with that of children without BAEP abnormalities. The characteristic finding in a neurologically abnormal BAEP was slightly depressed amplitude of wave V, and the authors suggest that this is the most sensitive BAEP measure for the assessment of brainstem function in children recovered from meningitis. Author.

Discriminating and responsiveness abilities of two hearing handicap scales. Mulrow, C. D., Tuley, M. R., Aguilar, C. Division of General Internal Medicine, Audie L. Murphy Memorial Veterans' Hospital, San Antonio, Texas. *Ear and Hearing* (1990) Jun, Vol. 11 (3), pp. 176–80.

Several scales exist for screening handicap and assessing rehabilitation in elderly individuals with hearing loss. There are few comparative studies, however, to suggest which scales perform best. Using receiver-operating curves and responsiveness indices, we examined the relative discriminating ability and sensitivity to detect change of four scales: a long and short version of the Hearing Handicap Inventory in the Elderly (HHIE-L, HHIE-S), and a long and short version of the Revised Quantified Denver Scale of Communication Function (RQDS-L, RQDS-S). All scales were administered to 137 elderly veterans with hearing loss and 101 elderly veterans without hearing loss. Follow-up testing to determine relative ability to detect change was assessed in hearing impaired individuals only after they had used a hearing aid for 4 months. Discriminative accuracy for correctly identifying individuals with hearing loss were: HHIE-L 78 per cent, HHIE-S 79 per cent, RQDS-L 73 per cent, and RQDS-S 74 per cent. Overall differences between the HHIE-S and the RQDS-S were not statistically significant ($P = 0.06$). True positive results were greater with the HHIE-S compared to the RQDS-S ($P = 0.03$). Responsiveness indices were: HHIE-L 1.78, HHIE-S 1.86, RQDS-L 1.04, and RQDS-S 1.07. Differences between the HHIE-S and the RQDS-S were statistically significant ($P = 0.05$). We conclude short versions of the HHIE and RQDS are as accurate and sensitive for detecting change as long versions, and the HHIE-S is a superior versatile instrument for screening and assessing rehabilitation in elderly individuals with hearing impairment. Author.

Comparison of the FOF2 and FOF1F2 processing strategies for the Cochlear Corporation cochlear implant. Tye-Murray, N., Lowder, M., Tyler, R. S. Department of Otolaryngology, Head and Neck Surgery, University of Iowa Hospitals and Clinics, Iowa City. *Ear and Hearing* (1990) Jun, Vol. 11 (3), pp. 195–200.

In April 1985, an updated processing strategy became available for the Cochlear Corporation Nucleus cochlear implant. Whereas the original strategy codes only fundamental frequency, amplitude, and information in the second formant region, the newer strategy also codes frequencies in the first formant region. This investigation evaluated the speech recognition skills of five subjects who were experienced with both designs. On average, the addition of first formant information improved word identification in an audi-

tion-only condition and improved spondee recognition in noise. Scores for the NU 6 Monosyllabic Word Test and the Sentence Test Without Context improved from 8 per cent (2–12 per cent) to 28 per cent words correct (10–42 per cent), and from 31 per cent (10–45 per cent) to 64 per cent words correct (39–84 per cent), respectively. Scores for the Four-Choice Spondee Test in noise improved from 37 per cent (25–50 per cent) to 75 per cent (45–90 per cent). The per cent correct scores for the Iowa 14-Item Consonant Confusion Test in an audition-only and vision-plus-audition condition did not vary with the change in processing strategy. However, an information transfer analysis performed on the responses to the consonant test in a vision-only and a vision-plus-audition condition suggested that the newer strategy enhances the transmission of the voicing, duration, and envelope features. Author.

Effect of click polarity on ABR threshold. Singinger, Y. G., Masuda, A. Electrophysiology Laboratory, House Ear Institute, Los Angeles, California. *Ear and Hearing* (1990) Jun, Vol. 11 (3), pp. 206–9.

This study investigated the effects of click polarity on threshold detectability (threshold level in dB SL) of the auditory brain stem response (ABR). ABRs were obtained from 10 normally hearing adult subjects in response to rarefaction and condensation clicks presented from 0 to 10 dB SL in 2 dB steps. An objective response signal-to-noise estimator, known as Fsp, was the dependent variable. ABR detectability functions (Fsp by dB SL) were not significantly influenced by click polarity. Conclusions can only be drawn for normally hearing adults. For this population, click polarity does not affect threshold detection with the ABR. Author.

Gender, head size, and ABRs examined in large clinical sample. Durrant, J. D., Sabo, D. L., Hyre, R. J. Department of Otolaryngology, University of Pittsburgh, Pennsylvania. *Ear and Hearing* (1990) Jun, Vol. 11 (3), pp. 210–4.

Intergender differences in auditory brain stem response (ABR) latencies have been attributed to intergender differences in head size. We examined ABR data obtained clinically and head dimensions measured from mastoid to mastoid to vertex to derive horizontal and vertical vectors which might scale lengths of horizontally and vertically oriented pathways, respectively. Correlations with ABR latencies were all somewhat weak, and slopes of regressions were found to be too small to fully account for intergender latency differences. Head-size matched male and female samples also demonstrated significant differences in wave V latency, and, even in cases with relatively large heads, the use of a head-size correction could not be justified. The coupling between head dimensions and the I-V interpeak interval appears to be small enough to be ignored for clinical purposes. Nevertheless, to the extent to which relationships exist between head dimensions and ABR latency measures, this nonpathologic variable may be completely neutralized through the use of interpeak latency ratios (e.g., wave V latency divided by wave I latency). Author.

Auditory brain stem response in newborn infants—masking effect on ipsi- and contralateral recording. Hatanaka, T., Yasuhara, A., Hori, A., Kobayashi, Y. Department of Pediatrics, Kansai Medical University, Osaka, Japan. *Ear and Hearing* (1990) Jun, Vol. 11 (3), pp. 233–6.

Ipsilateral and contralateral auditory brain stem responses (ABR) were recorded in 10 full-term neonates. We investigated the effect of the masking level on the peak latency and amplitude on ipsi- and contralateral recordings. Clicks were presented at 85 dB HL to the ipsilateral ear and the masking white noise was presented at 75, 65, 55, 45 and 0 dB HL on the contralateral one, respectively. Masking had no significant effect on the ipsi- and contralateral recording in regard to latency and amplitude except for wave CVI (contralateral wave VI). In addition, ABR was recorded in an infant with total unilateral hearing loss. Crossover responses on both sides were observed without contralateral masking, but these responses were completely eliminated when 45 dB HL contralateral masking masked the 85 dB HL clicks to the dead ear. Therefore, it is suggested that such crossover responses will contribute to the ipsi- and contralaterally recorded ABR waveform when an ABR recording is carried out without contralateral masking. Our results indicate that contralateral masking is necessary and should be used in cases of unilateral hearing loss. Author.

Primary radiotherapy of T1 squamous cell carcinoma of the larynx:

analysis of 478 patients treated from 1963 to 1985. Johansen, L. V., Overgaard, J., Hjeltn-Hansen, M., Gadeberg, C. C. Department of Oncology and Radiotherapy, Radiumstationen, Aarhus, Denmark. *International Journal of Radiation Oncology Biology and Physics* (1990) Jun, Vol. 18 (6), pp. 1307–13.

Radiotherapy was administered to 478 consecutively treated patients with laryngeal T1 squamous cell carcinoma between 1963–1985. One hundred and seventeen had a supraglottic, 358 a glottic, and three a subglottic tumor. Supraglottis: 71 per cent males; 49 per cent T1a; 14 patients with nodes. Glottis: 90 per cent males; 82 per cent T1a; one patient with node. The 10-year value for local control in the supraglottic group was 55 per cent and in the glottic group 81 per cent. No difference was observed between T1a and T1b. Regional nodes and distant metastases were seldom seen in the glottic, but frequently observed in the supraglottic group. The treatment results appeared to be most favorable in women. The 10-year corrected survival for supraglottic and glottic tumors demonstrated a highly significant difference, 67 per cent compared to 94 per cent. There was a significantly increasing incidence of events with lower tumor differentiation. Split-course and conventional radiotherapy gave equal treatment results, but later complications were significantly more common with the former. A major problem was new primary cancers, which within 20 years occurred in 34 per cent of patients surviving a supraglottic tumor and in 23 per cent of the glottic patients. The predominant new site was the lung (23 per cent and 13 per cent respectively). Thus, in the glottic group more patients died from the new cancer than from the glottic carcinoma. Author.

Abnormal nasal glandular secretion in recurrent sinusitis. Jeney, E. V., Raphael, G. D., Meredith, S. D., Kaliner, M. A. Allergic Diseases Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892. *Journal of Allergy and Clinical Immunology* (1990) Jul, Vol. 86 (1), pp. 10–18.

Recurrent sinusitis (RS) is a very common clinical problem for which no underlying cause can generally be ascertained. We examined nasal mucosal responses in 14 patients with RS to determine if a relative deficiency in secretion of glandular antimicrobial factors might play a role. Twenty-four subjects with no history of sinusitis were studied concurrently as normal control (NC) subjects. RS was defined by two or more episodes of acute sinusitis per year for two or more years. After provocation with 25 mg of methacholine or 1 mg of histamine, nasal washings were analyzed for total proteins: the plasma protein albumin, IgG, and nonsecretory IgA (nsIgA), and the glandular proteins secretory IgA (sIgA), lactoferrin (LFN), and lysozyme (LZM). Although baseline secretions in patients with RS were relatively enriched with LFN and LZM as compared to that of secretions in NC subjects, patients with RS had a blunted cholinergic response with decreased secretion of albumin, IgG, nsIgA, sIgA, and LZM. Histamine responses were equivalent in both patients with RS and NC subjects. After four to 12 months of medical treatment, the abnormal cholinergic responses improved on repeat methacholine challenge in all eight subjects with RS rechallenged. Thus, patients with RS have a reversible reduction in nasal mucosal secretory responses to cholinergic stimulation. Since glandular secretions are rich in antimicrobial factors, such as LFN, LZM, and sIgA, it appears possible that the inability to secrete glandular proteins normally may predispose to recurrent infections. Author.

Relationship between thyroarytenoid activity and laryngeal resistance. Tully, A., Brancatisano, A., Loring, S. H., Engel, L. A. Thoracic Medicine Unit, Westmead Hospital, Sydney, New South Wales, Australia. *Journal of Applied Physiology* (1990) May, Vol. 68 (5), pp. 1988–96.

We examined the relationship between subglottic pressure (P), flow (V), and thyroarytenoid (TA) muscle activity in six anesthetized tracheostomized dogs while a constant flow (0.05–1.2 l/s) of warmed humidified air was passed through the upper airway in an expiratory direction. The TA activity was recorded by fine bipolar wire electrodes and was reflexly altered by changes in lung volume and chest wall compression. The integrated muscle activity was expressed as a per centage of a maximal peak integrated TA activity (per cent max). In the absence of TA activity the pressure-flow relationship was alinear and could be described by a power function, Log-log P-V plots at varying levels of TA activity were linear, with a slope of 1.84 ± 0.07 (SD). When TA activity increased,

laryngeal resistance increased exponentially. An effective hydraulic diameter was calculated for increments in per cent max TA and decreased linearly with per cent max TA. In three dogs the glottic diameter was computed from glottic area measured by fiber-optic laryngoscopy, and it also decreased linearly as TA increased. Sectioning of the external motor branch of the superior laryngeal nerve to the cricothyroid muscle demonstrated no consistent effect on laryngeal resistance over a range of TA activity. The results indicate that laryngeal dimensions decrease linearly with TA activity. However, the P-V relationship of the larynx may be described by a power function, with a single exponent consistent with an orifice flow regimen. Spontaneous activity of the cricothyroid muscle does not measurably influence this relationship. Author.

Thyroid iodine content and serum thyroglobulin level following external irradiation to the neck for Hodgkin's disease. Schlumberger, M., Sebagh, M., De Vathaire, F., Bayle, Fragu, P., Parmentier, C. Institut Gustave-Roussy, Villejuif, France. *Journal of Endocrinological Investigation* (1990) Mar, Vol. 13 (3), pp. 197–203.

Fifty-four clinically euthyroid patients were evaluated one up to 17 yr after external irradiation to the neck for Hodgkin's disease. T4 level was decreased in six per cent, while basal TSH level was increased in 44 per cent, and TSH response to TRH was increased in 66 per cent of the patients with normal basal TSH level. Thyroid iodine content (TIC), measured in 50 patients, was below 5 mg in 18. The 29 patients with normal basal TSH level had a mean TIC (6.8 ± 2.7 mg) significantly lower ($P < 0.01$) than the control population (14.6 ± 5 mg). A significant positive correlation was found between log T4 and log TIC ($r = 0.55$, $P < 0.01$). Thyroglobulin (Tg) level was increased in 53 per cent of the patients with no palpable thyroid abnormality. It was not related to TSH level but was related to younger age at irradiation. T4 treatment decreased Tg level to the normal range in five of eight patients. These facts suggest subclinical thyroid abnormalities and patients with elevated Tg levels should be considered at risk for developing a thyroid tumor. Author.

Van Gogh had Meniere's disease and not epilepsy. Arenberg, I. K., Countryman, L. F., Bernstein, L. H., Shambaugh, G. E. Jr. International Meniere's Disease Research Institute, Colorado Neurologic Institute, Englewood 80110. *Journal of American Medical Association* (1990) Jul 25, Vol. 264 (4), pp. 491–3.

We intend to correct the historical error that Vincent Van Gogh's medical problem resulted from epilepsy plus madness, a diagnosis made during his life but for which no rigid criteria are apparent. Review of 796 personal letters to family and friends written between 1884 and his suicide in 1890 reveals a man constantly in control of his reason and suffering from severe repeated attacks of disabling vertigo, not a seizure disorder. His own diagnosis of epilepsy was made from the written diagnosis by Dr Peyron, the physician at the asylum of St Remy (France), wherein on May 9, 1889, Van Gogh voluntarily committed himself to the asylum for epileptics and lunatics. However, the clinical descriptions in his letters are those of a person suffering from Meniere's disease, not epilepsy. The authors point out that Prosper Meniere's description of his syndrome (an inner-ear disorder) was not well known when Van Gogh died and that it often was misdiagnosed as epilepsy well into the 20th century. Author.

Head, neck, and maxillofacial childhood Burkitt's lymphoma: a retrospective analysis of 31 patients. Anavi, Y., Kaplinsky, C., Calderon, S., Zaizov, R. Department of Oral and Maxillofacial Surgery, Beilinson Medical Center, Petah Tiqva, Israel. *Journal of Oral and Maxillofacial Surgery* (1990) Jul, Vol. 48 (7), pp. 708–13.

Thirty-one children with Burkitt's lymphoma of the head, neck, and maxillofacial region diagnosed between 1976 and 1988 were reviewed. The age range was two to 17 years (median, 7.2 years), and 77.4 per cent were males. The most common presenting symptoms were detectable masses, floating and/or painful teeth, enlarged cervical lymph nodes, sore throat, and neurologic signs. The predominant primary tumor sites were the jaws and tonsils. All patients were staged by a clinical staging system, 17 of them having stage I–II, and 14 stage III–IV. Levels of lactate dehydrogenase and ferritin were the only significant laboratory parameters correlating with initial staging and disease-free survival. Radiologic features in the jaws were poorly circumscribed destructive lytic lesions with migration and crypt destruction of unerupted teeth buds.

Complete disappearance of these findings was noted after successful chemotherapy and clinical regression of the tumor. Eighteen (58.1 per cent) patients attained complete remission with a follow-up of five to 100 months. Stage was the most significant variable affecting outcome, with 90.2 per cent, disease-free survival of stage I patients, 72.4 per cent of stage II, and 18.2 per cent of stage III-IV. Based on these results, it is concluded that localized (stage I and II) Burkitt's lymphoma is responsive to chemotherapy and thus has a favourable prognosis. Author.

Alterations in velopharyngeal function after maxillary advancement in cleft palate patients. Watzke, I., Turvey, T. A., Warren, D. W., Dalston, R. University of North Carolina School of Dentistry, Chapel Hill 27599-7450. *Journal of Oral and Maxillofacial Surgery* (1990) Jul, Vol. 48 (7), pp. 685-9.

Velopharyngeal function was assessed aerodynamically prior to surgery and at least one year following surgery in 24 cleft palate patients who underwent maxillary advancement. In five patients (23 per cent) deterioration and in five patients (23 per cent) improvement of velopharyngeal function was observed. In those patients whose velopharyngeal function improved, a pharyngeal flap was in place at surgery. Of the five patients whose velopharyngeal function deteriorated, four had adequate and one borderline adequate velopharyngeal function prior to surgery. In the remaining 14 patients, velopharyngeal function was unchanged. No relationship between the amount of maxillary advancement or the 'need ratio' and velopharyngeal function was observed. Author.

All that wheezes. Muth, D., Schafermeyer, R. W. Charlotte Memorial Hospital and Medical Center, NC 28203. *Pediatric Emergency Care* (1990) Jun, Vol. 6 (2), pp. 110-12.

New onset wheezing in the young child can present an interesting differential diagnostic challenge, especially when there is an atypical presentation of a foreign body lodged in the airway. A thorough history and physical examination helps, but one must remember that a foreign body in the trachea or esophagus can masquerade as a respiratory illness. The chest X-ray is a useful part of the evaluation process. A high degree of suspicion is necessary on the part of the physician to remember that 'all that wheezes is not asthma', even in the absence of a history of aspiration of a foreign body. Author.

Retropharyngeal cellulitis: an unusual cause of respiratory distress in infancy. Lichenstein, R. Division of Pediatric Medicine, University of Maryland Hospital, Baltimore. *Pediatric Emergency Care* (1990) Jun, Vol. 6 (2), pp. 138-40.

The case of a 10-month-old infant who developed acute stridor, fever, and wheezing in the winter is presented. The ultimate diagnosis of retropharyngeal cellulitis was unsuspected. A review of this entity, along with differential diagnosis and management strategies, is included. Author.

Gamma-globulin treatment of recurrent acute otitis media in children. Jorgensen, F., Andersson, B., Hanson, L. A., Nysten, O., Eden, C. S. Department of Clinical Immunology, University of Goteborg, Sweden. *Pediatric Infectious Diseases Journal* (1990) Jun, Vol. 9 (6), pp. 389-94.

This study examined the hypothesis that children prone to acute otitis media have a reduced concentration of circulating antibodies of the IgG2 subclass and that this defect can be compensated for by gamma-globulin treatment. Infants and children below 18 months of age with at least three episodes of acute otitis media were randomized to intramuscular gamma-globulin or no treatment and were followed for six months. We could demonstrate neither reduced IgG2 nor specific anti-polysaccharide antibody activity in the otitis-prone children. In contrast they had higher concentrations of IgG2 and antibodies to phosphorylcholine than did age-matched controls. There was neither a relationship between the IgG2 concentration and the number of otitis episodes prior to enrollment nor a reduction in otitis frequency in the gamma-globulin-treated group. Author.

Advanced head and neck cancer: low-dose, split-course radiation therapy and simultaneous infusion of 5-fluorouracil and cisplatin. Stryker, J. A., Harvey, H. A., Houck, J. R., Manders, E. K., Bradford, J. J. Division of Radiotherapy, Milton S. Hershey Medical

Center, Pennsylvania State University, Hershey 17033. *Radiology* (1990) Aug, Vol. 176 (2), pp. 567-71.

Twenty-three patients with advanced untreated head and neck cancer, nine patients with recurrent cancer, and six patients with recurrent cancer who underwent surgery and had postoperative persistence of tumor were treated with three two-week courses of irradiation (1,500 cGy in 10 fractions each) concurrently with cisplatin and a five-day infusion of 5-fluorouracil. A fourth two-week course of irradiation (2,000 cGy in 10 fractions) brought the final tumor dose to 6,500 cGy. Twenty patients in the untreated group and three patients in the recurrent group (33 per cent) had a complete response. There were 10 local recurrences in the untreated group (43 per cent), seven in the recurrent group (78 per cent), and three in the persistent group (50 per cent). At 17 months after the start of treatment, the survival rate for the untreated patients was 51 per cent, for the patients in the recurrent group it was 11 per cent; and for the patients in the persistent group it was 20 per cent ($P = 0.03$). Most patients experienced toxicity, including nausea, vomiting, weight loss, and mucositis. Clinical trials are necessary to determine whether simultaneous chemotherapy and radiation therapy is an improved method of treatment for advanced head and neck cancer. Author.

Early onset of presbycusis in Down syndrome. Buchanan, L. H. Audiology Department, Shriver Center University Affiliated Program, Waltham, Massachusetts. *Scandinavian Audiology* (1990), Vol. 19 (2), pp. 103-10.

Puretone threshold data are reported as a function of age for 152 subjects with Down syndrome (age range: 5.4 years to 59.1 years). Results for the Down syndrome subjects were compared to data collected on 53 non-syndrome mentally-retarded subjects, and to data previously collected by Jatho (1969) for normal individuals. The results revealed that Down syndrome subjects have an earlier onset of presbycusis than both normal individuals and non-syndrome mentally-retarded subjects, and that presbycusis is evident in Down syndrome in at least the second decade of life. The data imply that for Down syndrome subjects, early onset of presbycusis is another manifestation of precocious aging. The study of presbycusis in Down syndrome may give us additional insights on presbycusis in the normal population. The results further imply that studies concerned with the incidence and type of hearing loss in Down syndrome need to take age into consideration. Author.

Cochlear implants, vibrators and hearing aids in the rehabilitation of postlingual deafness. Rihkanen, H., Jauhainen, T., Linkola, H., Paiva, T. Department of Otolaryngology, University Hospital, Helsinki, Finland. *Scandinavian Audiology* (1990), Vol. 19 (2), pp. 117-21.

Three groups of postlingually deaf adults were formed by non-random selection. The subject with some residual hearing were fitted with a powerful hearing aid (HA group, $n = 10$). The others received either a single-channel vibrotactile aid (V group, $n = 8$) or a single-channel intracochlear implant (CI group, $n = 10$). Training containing individual counselling and rehearsal in small groups was arranged. During the follow-up (CI group 2.0 yrs, V group 1.8 yrs, HA group 2.6 yrs), the subject's achievement was assessed by a repetition of audiological testing and written questionnaires. Whereas the HA group obtained the highest scores in the audiological tests, the CI group found the implant most beneficial in everyday life. No significant improvement in the test scores was observed during the follow-up. The extent of personal training, after an initial training period and motivation of the user, did not affect the test scores or the subjective evaluation. Author.

The influence of inner ear melanin on susceptibility to TTS in humans. Barrenas, M. L., Lindgren, F. Department of Audiology, Sahlgrenska Sjukhuset, Goteborg, Sweden. *Scandinavian Audiology* (1990), Vol. 19 (2), pp. 97-102.

In order to investigate the function of the inner ear melanin, the relationship between skin pigmentation and noise-induced temporary hearing loss (TTS) was studied. Forty-four normal-hearing Caucasian subjects were divided into three groups according to their sun sensitivity. Hearing thresholds before and after exposure were ascertained with a computerized sweep frequency audiometer in the frequency range 2-8 kHz. The noise exposure consisted of a 1/3-octave band-filtered noise with a centre frequency of 2 kHz at 105 dB SPL for 10 min. The mean TTS in the frequency

range 2–8 kHz showed statistically significant differences between the three groups, i.e. the most pigmented subjects developed least TTS, and the least pigmented subjects most TTS. Author.

Hangman's fracture resulting from improper seat belt use. Yarbrough, B. E., Hendey, G. W. Department of Surgery, Vanderbilt University Medical Center, Nashville, TN. *Southern Medical Journal* (1990) Jul, Vol. 83 (7), pp. 843–5.

Diagonal seat belt application without accompanying lap belt closure may produce severe cervical spine injuries, including hang-

man's fracture and decapitation. Seat belts are effective in reducing injury, but they must be worn properly to do so. Passive restraint systems involving a diagonal seat belt may be hazardous if the motorist does not use the accompanying lap belt. We have presented a case in which the driver in a motor vehicle accident sustained a hangman's fracture (bilateral fracture of the pedicles of C-2) caused by use of a diagonal seat belt without accompanying lap belt closure. The mechanism of injury, as classically described in judicial hanging, is hyperextension and distraction, which occurred when the victim 'submerged' under the diagonal seat belt and was caught at the neck. Author.