

## Abstract Selection

**Visual and brain stem auditory evoked responses in Wilson's disease.** Satishchandra, P., Swamy, H. S. Department of Neurology, National Institute of Mental Health & Neuro Sciences (NIMHANS), Bangalore, India. *Acta Neurologica Scandinavica* 1989 Feb, Vol. 79 (2), pp. 108–13.

Sensory evoked potentials were studied in 15 patients with Wilson's disease. Thirteen patients were investigated with pattern reversal visual stimulation. A prolonged P 100 latency of the VEP was present in seven patients. Brain stem auditory responses were evoked in 12 patients. Prolongation of III-V and I-V interpeak latency was found in eight patients. The evoked potential studies demonstrated subclinical disturbances in optic and caudal brain-stem auditory pathways. Further studies are in progress to evaluate the role of these techniques in monitoring the therapy of newly diagnosed cases. Author.

**Otoneurological abnormalities in asymptomatic HIV-seropositive patients.** Rosenhall, U., Hakansson, C., Lowhagen, G. B., Hanner, P., Jonsson, E. B. Department of Audiology, University of Gothenburg, Sahlgren's Hospital, Sweden. *Acta Neurologica Scandinavica* 1989 Feb, Vol. 79 (2), pp. 140–5.

Twenty-four male patients, all homosexual except one, with asymptomatic HIV-infection were studied. The patients had no signs of opportunistic CNS-infections but six had been treated for syphilis. The patients were tested with auditory brainstem response (ABR) audiometry and with oculomotor tests (saccades and smooth pursuit eye movements). The ABR-recordings were pathological in 38 per cent of the cases and the oculomotor tests in 50 per cent of the cases. Abnormality of either one or of both methods were seen in 67 per cent of the patients tested. The duration of the HIV-infection had no influence on the test results. The abnormal otoneurological tests indicate that occult CNS-dysfunction is a frequent finding in asymptomatic HIV-positive patients. Author.

**Nasal histamine release following hyperosmolar and allergen challenge.** Krayenbuhl, M. C., Hudspeth, B. N., Brostoff, J., Scadding, G. K., Guesdon, J. L., Latchman, Y. Department of Immunology, University College & Middlesex School of Medicine, London, UK. *Allergy* 1989 Jan, Vol. 44 (1), pp. 25–9.

Allergic rhinitis is characterized by symptoms of sneezing, itching of the nose with watery secretions, and nasal obstruction. We have previously shown that patients can have the diagnosis of allergic rhinitis confirmed by nasal provocation tests and assessment of nasal inspiratory peak flow (NIPF) after specific allergen or hyperosmolar challenge. We now show that histamine is released into the nasal lavage fluid in response to such challenges. Saline lavage alone results in detectable histamine levels in the order of 5 ng/ml, but in the presence of allergen (HDM) there is a significant increase in histamine release in atopics but not in control subjects. With hyperosmolar challenge, atopics showed a biphasic response in that histamine release was increased with 1.8 per cent and 3.6 per cent saline but returned to baseline with 5.4 per cent and 7.2 per cent saline, then showing a further increase with 9.0 per cent saline. This raises the possibility of two populations of responsive mast cells. Hyperosmolar challenge leads to symptoms of nasal itch and sneezing as well as histamine release in atopics but not in controls. This suggests that hyperosmolar challenge can be used as a simple diagnostic test for allergic rhinitis and may provide a model for nasal hyper-reactivity. Author.

**Seasonal variation in suppressor T cell subsets and non-specific suppressor cell function in hay fever sufferers.** Fennerty, A. G., Jones, K. P., Fifield, R., Davies, B. H. Asthma Research Unit, Sully Hospital, Nr. Penarth, South Glamorgan, Wales. *Allergy* 1989 Feb, Vol. 44 (2), pp. 103–7.

The helper/suppressor T cell ratio, as defined by monoclonal antibodies, was significantly higher in hay fever sufferers compared

with controls (P less than 0.05), but only during or shortly after the pollen season. This was due to a reduction in the suppressor subset, which returned to control values in the winter. There was no significant difference in the non-specific concanavalin A-induced suppressor cell function compared with controls. The mean summer value was significantly lower than the winter value (P less than 0.05), but we cannot be sure that this was not the result of changes in laboratory conditions. No relationships were found between T cell subsets or suppressor cell function and total or specific IgE levels, or between T cell subsets and suppressor cell function. Our findings suggest that in hay fever, reduction in suppressor cell numbers and function is a secondary phenomenon. Author.

**The effect of astemizole on bronchial hyperresponsiveness and exercise-induced asthma in children.** Backer, V., Bach-Mortensen, N., Becker, U., Brink, L., Howitz, P., Hansen, K. K., Jensen, D. W., Laursen, E. M. Dept. of Medicine B, Laboratory of Respiratory Physiology, State University Hospital, Copenhagen, Denmark. *Allergy* 1989 Apr, Vol. 44 (3), pp. 209–13.

The ability of the new generation H1-receptor antagonist, astemizole, to prevent histamine-induced airway obstruction and exercise-induced asthma (EIA) was studied in 20 children with asthma. The study was a randomized clinically controlled trial of oral astemizole versus placebo in a cross-over study. In each of the two treatment periods the children were tested at days 0, 6, 15 and 22 of therapy. The two treatment periods were separated by a washout period of 50 days, and at each visit a bronchial challenge with increasing concentrations of histamine followed by an exercise test was performed, and peak flow and asthmatic symptom score were recorded daily. The children tolerated significantly higher mean concentrations of histamine when treated with astemizole compared with placebo (P less than 0.001). Astemizole postponed the response to exercise, but no change in the maximal response was found. No differences between the treatment periods were found regarding frequency of asthmatic symptoms or the daily recording of peak flow. Author.

**Prevalence and predictors of bronchial hyperresponsiveness in children aged 7–16 years.** Backer, V., Bach-Mortensen, N., Dirksen, A. Dept. of Medicine B, Laboratory of Respiratory Physiology, State University Hospital, Copenhagen, Denmark. *Allergy* 1989 Apr, Vol. 44 (3), pp. 214–9.

To study the prevalence and possible predictors of bronchial responsiveness we examined a cross-section of 527 children aged 7–16 years from Copenhagen. The method used included an interview with the child and the parents, skin prick test with common allergens and se-IgE. Bronchial responsiveness was measured by a histamine inhalation test. We found that 79 (16 per cent) of the children had bronchial hyperresponsiveness (BH), defined as a 20 per cent fall in FEV1 with a provoking concentration of histamine (PC20) at 8 mg/ml or less. Atopic symptoms defined as asthma, rhinitis or eczema were significantly (P less than 0.001) correlated to BH both in prevalence and degree of BH. None of the children with urticaria had BH. The degree of bronchial responsiveness was also significantly influenced (P less than 0.001) by family disposition to atopy, whereas we found no correlation between BH and "passive" smoking, specific skin test in unselected children, or elevation of IgE in children without atopic symptoms. We conclude that BH is severest in children with asthma, independent of elevated IgE or positive skin prick test. Children with rhinitis, dermatitis, or asymptomatic BH have the same degree of BH; this differed from that in children with asthma. Author.

**Tracheobronchial foreign bodies. A persistent problem in pediatric patients.** Puhakka, H., Svedstrom, E., Kero, P., Valli, P., Iisalo, E. Department of Otolaryngology, University Central Hospital, Turku, Finland. *American Journal of Diseases in Children* 1989 May, Vol. 143 (5), pp. 543-5.

Extraction of a foreign body from the tracheobronchial tree was accomplished for 83 children. The mean age was one year nine months for the 27 girls and three years one month for the 56 boys; 46 children (55 per cent) were younger than two years of age. Sixteen (19 per cent) of the foreign bodies were radiopaque, and 35 (42 per cent) were either verified or suspected radiologically before endoscopy. Forty-one foreign bodies (49 per cent) were situated in the right bronchial tree. Extraction was successful in 81 children (98 per cent) and was performed on 50 children (60 per cent) during the first 24 hours. Twenty-five (30 per cent) of the foreign bodies were peanuts. Three children experienced a residual foreign body, without serious complications. We believe that an open tube bronchoscopy should be performed whenever abnormal stridor or cough is observed in a healthy child and when appropriate antibiotic therapy is unsuccessful. Author.

**Electrogastrograms during motion sickness in fasted and fed subjects.** Stewart, J. J., Wood, M. J., Wood, C. D. Department of Pharmacology and Therapeutics, Louisiana State University Medical Center Shreveport 71130-3932. *Aviation, Space and Environmental Medicine* 1989 Mar, Vol. 60 (3), pp. 214-7.

Seven human volunteers were subjected to stressful Coriolis stimulation (rotating chair) either during the fasted state or following the ingestion of yogurt (6 oz). Subjects tested after yogurt reached a malaise-III (M-III) endpoint of motion sickness after significantly ( $p$  less than 0.01) fewer head movements than subjects tested in the fasted state. Surface electrogastrogram (EGG) recordings at M-III were similar for both dietary states and consisted of a brief period of tachygastria, followed by a period of low amplitude EGG waves. Ingestion of yogurt enhanced susceptibility to motion sickness but did not affect the associated pattern of EGG. Author.

**The marginal mandibulectomy for the treatment of mandibular tumours.** Pogrel, M. A. Division of Oral and Maxillofacial Surgery, University of California, San Francisco. *British Journal of Oral and Maxillofacial Surgery* 1989 Apr, Vol. 27 (2), pp. 132-8. With the knowledge and techniques gained from orthognathic surgery and more precise imaging techniques, it has become more practical to carry out rim or marginal resections for some malignant tumours of the alveolus to preserve mandibular continuity and yet have adequate tumour margins. This is of great functional and cosmetic importance to the patient. A study of 11 patients is presented to analyze criteria for carrying out this procedure. Author.

**Parapharyngeal neurilemmomas.** Bradley, N., Bowerman, J. E. Department of Oral & Maxillofacial Surgery, Queen Mary's University Hospital, Roehampton, London. *British Journal of Oral and Maxillofacial Surgery* 1989 Apr, Vol. 27 (2), pp. 139-46.

Parapharyngeal neurilemmomas are uncommon benign tumours. Two patients are reported with one tumour arising from the vagus and the other from the hypoglossal nerve. Access to the vagal tumour was accomplished with the aid of an osteotomy at the angle of the mandible. Theoretically these lesions can be enucleated with preservation of the nerve or resected and repaired with a nerve graft. However, these alternative procedures were impractical in both these patients and the explanations for this are discussed. Author.

**Treatment of persistent and recurrent nasopharyngeal carcinoma by brachytherapy.** Sham, J. S., Wei, W. I., Choy, D., Ho, C. M., Tai, P. T., Choi, P. H. Department of Radiotherapy and Oncology, University of Hong Kong, Queen Mary Hospital, Pokfulam. *British Journal of Radiology* 1989 Apr, Vol. 62 (736), pp. 355-61. The early results of brachytherapy for persistent and recurrent nasopharyngeal carcinoma in 30 patients is presented. Fifteen patients were treated by intracavitary caesium, 12 patients were treated by interstitial gold grain implant using the split-palate approach and three patients were treated by both intracavitary caesium and interstitial gold grain implant for the first and second relapse in the nasopharynx, respectively. The overall tumour control rate for intracavitary caesium was 5/18 (28 per cent) with median follow-up of 25.2 months, and for interstitial gold grain

implant it was 9/14 (64 per cent) with median follow-up of 16.5 months. Interstitial gold grain implantation appears to be effective in the treatment of persistent and recurrent nasopharyngeal carcinoma. Author.

**First interim progress report on the second British Institute of Radiology Fractionation Study: short versus long overall treatment times for radiotherapy of carcinoma of the laryngopharynx.** Wiernik, G., Alcock, C. J., Bates, T. D., Berry, R. J., Brindle, J. M., Dalby, J. E., Fowler, J. F., Gajek, W. R., Goodman, S., Haybittle, J. L., et al. British Institute of Radiology, London. *British Journal of Radiology* 1989 May, Vol. 62 (737), pp. 450-6.

Preliminary data from a second British Institute of Radiology Fractionation Trial comparing short (less than or equal to four weeks) and long (greater than four weeks) overall treatment times are reported. The intake of patients ran from January, 1975 to December, 1985 when 611 patients with carcinoma of the laryngopharynx were registered in this prospective, randomized, multi-centre clinical trial. No significant differences have, so far, been demonstrated between the two arms of the trial with respect to observed survival rates, tumour-free or laryngectomy-free rates. Further long-term follow-up is continuing. Author.

**Platinum chemotherapy, radiotherapy and the inner ear: implications for 'standard' radiation portals.** Kirkbride, P., Plowman, P. N. Department of Radiotherapy, St Bartholomew's Hospital, West Smithfield, London. *British Journal of Radiology* 1989 May, Vol. 62 (737), pp. 457-62.

In this centre, platinum chemotherapy precedes radiotherapy in several primary malignancies arising in structures adjacent to the mastoid bone. The augmented ototoxicity of platinum and radiotherapy to fields encompassing the inner ear is exemplified by a case report. The order of administration may not be critical. This important toxicity, particularly for young patients, may be reduced by careful shielding considerations during planning of radiation portals, as exemplified in two further cases, and by carboplatin chemotherapy. Author.

**Bronchoscopy to evaluate hemoptysis in older men with non-suspicious chest roentgenograms.** Lederle, F. A., Nichol, K. L., Parenti, C. M. Department of Medicine, Minneapolis Veterans Administration Medical Center. *Chest* 1989 May, Vol. 95 (5), pp. 1043-7.

Six of 106 older men with hemoptysis and a nonsuspicious chest roentgenogram who underwent fiberoptic bronchoscopy were found to have cancer. Four of the five bronchogenic carcinomas appeared to be surgically resectable. Cancer patients were significantly older, had smoked within the last five years, and had a significantly higher frequency of central abnormalities on chest roentgenogram. Six additional bronchogenic carcinomas were diagnosed at follow-up. Two of these were probably present but not detected at the time of bronchoscopy. We conclude that (1) hemoptysis with a nonsuspicious chest roentgenogram carries an appreciable risk of cancer in older men with substantial smoking histories, (2) these cancers are often resectable, (3) a chest roentgenogram in which the central lung fields are obscured in any way should not be considered negative in patients with hemoptysis, and (4) a negative bronchoscopic examination does not exclude the possibility of cancer in these patients. Author.

**Hoarseness secondary to left atrial myxoma.** Rubens, F., Goldstein, W., Hickey, N., Dennie, C., Keon W. University of Ottawa, Heart Institute, Ottawa Civic Hospital, Canada. *Chest* 1989 May, Vol. 95 (5), pp. 1139-40.

A 62-year-old woman presented with a history of hoarseness. Although stable for ten years, she recently showed signs of deterioration. Investigations revealed left vocal cord paralysis and a large left atrial tumour displacing the left pulmonary artery under the arch of the aorta. The lesion was removed and the normal aortopulmonary window on computed tomography (CT) scan was restored. On review of the literature, this case appears to be the first to suggest that myxomas cause recurrent laryngeal nerve palsy through direct effects. Author.

**Massive epistaxis from nasal CPAP therapy.** Strumpf, D. A., Harrop, P., Dobbin, J., Millman, R. P. Department of Medicine, Rhode Island Hospital, Providence 02903. *Chest* 1989 May, Vol. 95 (5) pp. 1141.

A 75-year-old man with obstructive sleep apnea and secondary right heart failure was started on nasal CPAP therapy. Shortly thereafter he experienced massive life-threatening epistaxis requiring nasal packing and hospitalization. The epistaxis was thought to be due to the drying effect of nasal CPAP. Author.

**Priming effect of a birch pollen season studied with laser Doppler flowmetry in patients with allergic rhinitis.** Juliusson, S., Bende, M. Department of Otolaryngology, Central Hospital, Skovde, Sweden. *Clinical Allergy and Immunology* 1988 Nov, Vol. 18 (6), pp. 615-8.

Nasal mucosal provocation tests were done on eight patients with seasonal allergic rhinitis before and after a birch pollen season. The effects on nasal microvascular blood flow were detected by means of laser Doppler flowmetry. The patients reacted to the birch pollen provocation with an increase in blood flow. This increase was greater after the pollen season than before, when the same pollen doses were used, indicating a priming phenomenon of the resistance vessels. Author.

**Skin and mucosal lesions associated with cyclosporin A therapy: report of a case.** Feldhoff, C. M., Reber, T., Drachman, R., Drukker, A. Department of Pediatric Nephrology, University Hospitals, Essen, FRG. *Clinical Nephrology* 1989 Apr, Vol. 31 (4), pp. 210-2.

A 16-year-old boy developed bullous lesions on fingers, ears, tongue, and buccal mucosa as well as cauliflower-like growths on the epiglottis and vocal cords. 1 1/2 years after a second renal transplantation and exposure to sunlight while receiving cyclosporin A (CsA). Withdrawal of CsA was followed by complete resolution of skin and mucosal lesions. A predisposition for adverse reactions to CsA is suggested, as additional side effects of CsA therapy were also present. Author.

**Brainstem auditory evoked responses in rats with experimental chronic renal failure.** Shvili, Y., Gafer, U., Zohar, Y., Talmi, Y. P., Levi, J. Department of Otolaryngology, Hasharon Hospital, Tel Aviv University Medical School, Petah-Tiqva, Israel. *Clinical Science* 1989 Apr, Vol. 76 (4), pp. 415-7.

1. Chronic renal failure was induced in rats by five-sixths nephrectomy. Brainstem auditory evoked responses (BAER) was recorded after three months. 2. In the uraemic rats latency of the first wave was delayed, while the interpeak I-V latency was similar to that of the controls. 3. These results suggest a delayed neural conduction along the acoustic nerve or cochlear changes in uraemic rats. Author.

**Reversible sensorineural hearing loss in a stroke patient.** Bales, J. D. Army Audiology and Speech Center, Walter Reed Army Medical Center, Washington, DC. *Ear and Hearing* 1989 Apr, Vol. 10 (2), pp. 109-11.

A case is presented of a patient with lateral pontine stroke which resulted in a moderate unilateral sensorineural hearing loss. ABR, word recognition scores, acoustic reflexes, neurological evaluation, and CT scan were consistent with brain stem lesion. Recovery of hearing, including acoustic reflexes and word recognition ability, occurred two months after the stroke. Author.

**Perilymphatic fistulas in children: rationale for therapy.** Myer, C. M., Farrer, S. M., Drake, A. F., Cotton, R. T. University of Cincinnati College of Medicine, Department of Otolaryngology and Maxillofacial Surgery, Ohio. *Ear and Hearing* 1989 Apr, Vol. 10 (2), pp. 112-6.

We report 26 consecutive patients (32 ears) who were identified in a two-year period (July 1, 1985-June 30, 1987) with unexplained sudden, fluctuating, or progressive sensorineural hearing loss (SNHL). All patients underwent an exploratory tympanotomy and a perilymphatic fistula was identified in 13 patients (14 ears). The mean change of 14 +/- 27 dB in speech reception threshold before and after surgery was significant at  $P = 0.08$  among children with fistula and ranged from -30 to 80 dB. In children with sudden, progressive or fluctuating SNHL and multiple sensory deficits, including blindness or contralateral SNHL, or prior head trauma, prompt surgical exploration is mandatory. Additionally, the

aggressive management of otitis media with effusion is essential in such patients to minimize fluctuations in hearing caused by superimposed conductive hearing loss. Caution must be exercised to separate fluctuating hearing loss from fluctuations in audiologic testing. Author.

**The auditory brain stem response interaural, latency difference (ILD) in patients with brain stem lesions.** Musiek, F. E., Johnson, G. D., Gollegly, K. M., Josey, A. F., Glasscock, M. E. Department of Surgery, Dartmouth Hitchcock Medical Center, Hanover, New Hampshire. *Ear and Hearing* 1989 Apr, Vol. 10 (2), pp. 131-4.

The ABR interaural latency difference (ILD) from 15 patients with brain stem lesions was compared to the ILDs from patients with VIIIth nerve tumors, cochlear pathology, and a normal control group. All patients in the study had to meet the criteria of bilaterally symmetrical hearing for pure-tone thresholds in order to offset the effect of hearing loss on the ILD. Although the ILDs for the brain stem lesion group were larger than for the cochlear or normal groups, they were significantly smaller than for the VIIIth nerve tumor group. It appears that the ILD is not as sensitive a measure for detecting brain stem involvement as VIIIth nerve tumors. Author.

**Cytogenetic and *in situ* DNA-hybridization studies in intracranial tumors of a patient with central neurofibromatosis.** Wullich, B., Kiechle-Schwarz, M., Mayfrank, L., Schempp, W. Institute fur Humangenetik und Anthropologie der Universitat, Freiburg i. Br., Federal Republic of Germany. *Human Genetics* 1989 Apr, Vol. 82 (1), pp. 31-4.

We have studied a meningioma and an acoustic neurinoma of a patient with central neurofibromatosis. In the meningioma cells, one chromosome 22 was replaced by an almost metacentric, bisatellited marker chromosome that appeared monocentric after CBG-staining. *In situ* hybridization with a chromosome 22 centromere specific DNA probe (p22hom48.4) revealed specific signals in the pericentromeric region of the marker chromosome, indicating the presence of at least the short arm and the centromere of chromosome 22. The pericentromeric localization of the hybridization signals suggest the marker consists of an isoformation of the short arm of chromosome 22, resulting in a monosomy for the long arm of chromosome 22. In contrast to these findings in meningioma cells, no chromosomal abnormality could be detected in acoustic neurinoma cells. Our findings provide further evidence that loss of genetic material on the long arm of chromosome 22 is associated with the development of central neurofibromatosis. Author.

**Actinomycosis of the middle ear.** Olson, T. S., Seid, A. B., Pransky, S. M. Children's Hospital and Health Center, San Diego, CA. *International Journal of Pediatric Otorhinolaryngology* 1989 Feb, Vol. 17 (1), pp. 51-5.

Actinomycosis is an uncommon infection of the middle ear. Only 21 cases of actinomycosis of the middle ear have been reported in the English literature prior to this paper. The offending organism is *Actinomyces israelii*, which is an anaerobic, filamentous organism that is difficult to grow in culture. The infection is chronic and is seldom diagnosed prior to tympanomastoidectomy. The identification of small, yellow, glue-like masses, which are called sulfur granules, is often the key to making the diagnosis of actinomycosis of the middle ear. Following tympanomastoidectomy, penicillin is given orally for 3-6 months. Author.

**Thermal myringotomy versus grommets in the management of secretory otitis media.** Kent, S. E. Walsgrave Hospital, Coventry, U.K. *International Journal of Pediatric Otorhinolaryngology* 1989 Feb, Vol. 17 (1), pp. 31-5.

This paper presents the findings of a study of thermal myringotomy compared with the insertion of a grommet, in 30 children with secretory otitis media. The procedure was found to be easy to perform and free from complications. It provided ventilation of the middle ear for up to eight weeks. However, there was a recurrence of the middle ear effusion in 40 per cent of the thermal myringotomy ears. On the other hand, grommets were very effective in eliminating effusion over a six month period. I was unable to identify any parameter that will predict which patients will remain free of effusion after ventilation with a thermal myringotomy. Author.

**Naso- and oropharyngeal dimensions in children with obstructive sleep apnea.** Brodsky, L., Adler, E., Stanievich, J. F. Department of Otolaryngology, State University of New York, Buffalo. *International Journal of Pediatric Otorhinolaryngology* 1989 Feb, Vol. 17 (1), pp. 1–11.

Sixty children (3–11 years) were evaluated to determine variations in naso- and oropharyngeal dimensions associated with tonsil and adenoid hypertrophy. The subjects were grouped according to tonsil size and a clinical history of chronic upper airway obstruction. Intraoperative measurements included oropharyngeal diameter, length of the hard and soft palates, width and arch of the hard palate, nasopharyngeal volume, as well as tonsil and adenoid weights and volumes. A significantly larger oropharyngeal diameter was found in children with small, non-obstructing tonsils ( $P$  less than 0.01). Children with large, non-obstructing tonsils had a similar oropharyngeal diameter to those children with large, obstructing tonsils. However, tonsil volume, not weight, was increased in the children with large obstructing tonsils as compared to those with large non-obstructing tonsils and small non-obstructing tonsils ( $P$  less than 0.04). A shorter soft palate was associated with larger, obstructing tonsils ( $P$  less than 0.004). The length of the hard palate was similar in all patients, however, a trend towards a higher arched palate was seen in patients with larger, obstructing tonsils. The distance from the soft palate to the posterior pharyngeal wall was greater in obstructed patients with adenotonsillar hypertrophy ( $P$  less than 0.003). In patients requiring adenoidectomy, the nasopharyngeal volume prior to adenoidectomy was significantly smaller in patients with obstructive symptoms ( $P$  less than 0.001). Postadenoidectomy, no significant difference was found in the nasopharynx volume amongst all subjects. These data indicate that subtle differences in oropharyngeal dimensions exist which along with increased lymphoid tissue volume, lead to the development of obstructive symptoms. Etiologic considerations are discussed. Author.

**Physiologic and acoustic differences between male and female voices.** Titze, I. R. Department of Speech Pathology and Audiology, University of Iowa, Iowa City 52242. *Journal of the Acoustical Society of America* 1989 Apr, Vol. 85 (4), pp. 1699–707.

Comparison is drawn between male and female larynges on the basis of overall size, vocal fold membranous length, elastic properties of tissue, and prephonatory glottal shape. Two scale factors are proposed that are useful for explaining differences in fundamental frequency, sound power, mean airflow, and glottal efficiency. Fundamental frequency is scaled primarily according to the membranous length of the vocal folds (scale factor of 1.6), whereas mean airflow, sound power, glottal efficiency and amplitude of vibration include another scale factor (1.2) that relates to overall larynx size. Some explanations are given for observed sex differences in glottographic waveforms. In particular, the simulated (computer-modeled) vocal fold contact area is used to infer male-female differences in the shape of the glottis. The female glottis appears to converge more linearly (from bottom to top) than the male glottis, primarily because of medial surface bulging of the male vocal folds. Author.

**The cricothyroid muscle in voicing control.** Lofqvist, A., Baer, T., McGarr, N. S., Story, R. S. Haskins Laboratories, New Haven, Connecticut 06510-6696. *Journal of the Acoustical Society of America* 1989 Mar, Vol. 85 (3), pp. 1314–21.

Initiation and maintenance of vibrations of the vocal folds require suitable conditions of adduction, longitudinal tension, and transglottal airflow. Thus manipulation of adduction/abduction, stiffening/slackening, or degree of transglottal flow may, in principle, be used to determine the voicing status of a speech segment. This study explores the control of voiced and voicelessness in speech with particular reference to the role of changes in the longitudinal tension of the vocal folds, as indicated by cricothyroid (CT) muscle activity. Electromyographic recordings were made from the CT muscle in two speakers of American English and one speaker of Dutch. The linguistic material consisted of reiterant speech made up of CV syllables where the consonants were voiced and voiceless stops, fricatives, and affricates. Comparison of CT activity associated with the voiced and voiceless consonants indicated a higher level for the voiceless consonants than for their voiced cognates. Measurements of the fundamental frequency (FO) at the beginning of a vowel following the consonant show the common pattern of higher FO after voiceless consonants. For one subject, there was

no difference in cricothyroid activity for voiced and voiceless affricates; in this case, the consonant-induced variations in the FO of the following vowel were also less robust. Consideration of timing relationships between the EMG curves for voiced and voiceless consonants suggests that the differences most likely reflect control of vocal-fold tension for maintenance or suppression of phonatory vibrations. The same mechanism also seems to contribute to the well-known difference in FO at the beginning of vowels following voiced and voiceless consonants. Author.

**Neonatal status and hearing loss in high-risk infants.** Salamy, A., Eldredge, L., Tooley, W. H. Department of Psychiatry, University of California, San Francisco 94143-0984. *Journal of Pediatrics* 1989 May, Vol. 114 (5) pp. 847–52.

Neurophysiologic and behavioural assessments of auditory function were performed on 224 very low birth weight (less than or equal to 1500 gm) infants requiring intensive care in the nursery. The subjects were studied prospectively from 36 weeks to four years of age, as available for follow-up. To classify them according to their neonatal status, we applied a principal components analysis to a number of variables representative of the extent of illness and of patient care in early postnatal life. The subjects were then divided into neonatal status quartiles and evaluated for hearing outcome. All those with sensorineural hearing loss fell exclusively into the lowest neonatal status quartile. Sensorineural hearing loss was statistically associated (1) with greater amounts of frusemide administration for longer durations and in combination with aminoglycoside antibiotics and (2) with more episodes of low pH, hypoxemia, or both, higher total bilirubin levels, and substantially lower neonatal status scores. Birth weight, gestational age, highest creatinine level, Apgar score, and aminoglycosides alone were not systematically related to hearing capacity. Subjects in the lowest neonatal status quartile also had a considerably higher incidence of middle ear disorders, characterized by elevated thresholds and prolonged auditory brain stem-response latencies reflective of conductive hearing loss. We conclude that protracted illness and its associated treatment, independently of specific diagnostic categories, constitute important risk factors for permanent hearing loss and for transient hearing loss in early life. Author.

**Age and laryngeal airway resistance during vowel production.** Melcon, M. C., Hoit, J. D., Hixon, T. J. University of Arizona Institute for Neurogenic Communication Disorders, Tucson. *Journal of Speech and Hearing Disorders* 1989 May, Vol. 54 (2), pp. 282–6.

An investigation was conducted to determine if laryngeal valving economy, as reflected in measures of laryngeal airway resistance during vowel production, varies across adulthood. Sixty healthy men were studied, 10 from each of six age groups—25, 35, 45, 55, 65, and 75 years ( $\pm$  two years). Results indicated that there are age-related differences in laryngeal airway resistance during vowel production and that these differences are characterized by a lower mean resistance in 75-year-old men than in younger men of the ages studied. This finding provides insight into the impact of age on laryngeal function and has important implications for the evaluation and management of men with voice disorders. Author.

**Clinical modification of the tracheostoma breathing valve for voice restoration.** Doyle, P. C., Grantmyre, A., Myers, C. Dalhousie University, Halifax, Nova Scotia, Canada. *Journal of Speech and Hearing Disorders* 1989 May, Vol. 54 (2), pp. 189–92.

The development of the tracheostoma breathing valve and its use in conjunction with tracheoesophageal (TE) puncture prostheses has offered an important option to laryngectomized patients who undergo surgical-prosthetic voice restoration. Despite advantages that the tracheostoma breathing valve provides, some TE speakers are unable to utilize the device although they are successful users of the TE puncture voice prosthesis. This paper presents a safe, simple, and successful modification of the tracheostoma breathing valve in a single patient who demonstrated anatomical limitations for its use. Modification procedures are presented and clinical implications are discussed. Author.

**Non-traumatic cerebrospinal-fluid rhinorrhoea in cases of primary empty-sella syndrome.** Scott, R. J., Redmond, M. J. Intensive Care Unit, Mater Misericordiae Private Hospital, South Brisbane, Qld. *Medical Journal of Australia* 1989 Apr 17, Vol. 150 (8), pp. 458–61.

Non-traumatic cerebrospinal-fluid rhinorrhoea is a rare condition. Its insidious onset may occur with a sneezing or coughing episode which may lead to an incorrect diagnosis of allergic rhinitis or vasomotor rhinorrhoea. Two cases that occurred in association with primary empty-sella syndrome are described—in the second case, the fistula arose from the pituitary fossa. The history, incidence, clinical profile, investigation and management of this condition are reviewed. Author.

**Familial periodic ataxia.** Hankey, G. J., Gubbay, S. S. Department of Neurology, Royal Perth Hospital, WA. *Medical Journal of Australia* 1989 Mar 6, Vol. 150 (5), pp. 277–8.

A teen-age girl presented with recurrent stereotyped episodes of vertigo and ataxia and manifested constant horizontal gaze-evoked nystagmus. Cranial computed tomographic scans and metabolic biochemical screens gave normal results. The diagnosis of familial periodic ataxia was made from the family history and examination of the family members. Familial periodic ataxia is a rare disorder of cerebellar function which is inherited dominantly and has a benign prognosis. The underlying pathophysiology remains uncertain but a therapeutic response frequently is achieved with acetazolamide. Author.

**Acoustic neurinoma presenting as intratumoral bleeding.** Lee, J. P., Wang, A. D. Department of Neurosurgery, Chang Gung Memorial Hospital, Taipei, Taiwan, Republic of China. *Neurosurgery* 1989 May, Vol. 24 (5), pp. 764–8.

The authors report a case of acoustic neurinoma presenting as intratumoral bleeding. This is the tenth reported occurrence. The literature is reviewed. All cases that have been reported have appeared with sudden onset of headache, vomiting, and decreased levels of consciousness. Aneurysm rupture, an arteriovenous malformation, or other vascular anomalies are suspected first. Pre-existing unilateral hearing impairment is a valuable clue to differential diagnosis. Contrast-enhanced computed tomographic scans and cerebral angiograms are important tools for correct diagnosis. The tumor size (greater than 2 cm) and the thin, dilated vessels within the tumor are considered as pathogenetic factors for bleeding. When neurological status is not stable, placement of a ventriculoperitoneal shunt followed by urgent extirpation of the tumor is indicated. Author.

**Unusually aggressive osteomyelitis of the jaws. A report of two cases.** Krutchkoff, D. J., Runstad, L. Department of Oral Diagnosis/Pathology, University of Connecticut School of Dental Medicine, Farmington. *Oral Surgery, Oral Medicine, Oral Pathology* 1989 May, Vol. 67 (5), pp. 499–507.

Two cases of unusually aggressive osteomyelitis of the jaws are reported. Both cases manifested severe, rapidly progressive lytic destruction of the maxilla in spite of the fact that patients were young, healthy adults with no local or systemic factors that would predispose them to severe infection in either case. Characteristic historical, clinical, radiographic and histologic features are elaborated. Also, theoretical aspects of this disease entity are discussed in an effort to explain the unusually aggressive manner in which these cases presented. Author.

**Steroid treatment of laryngotracheitis: a meta-analysis of the evidence from randomized trials.** Kairys, S. W., Olmstead, E. M., O'Connor, G. T. Department of Maternal and Child Health, Dartmouth-Hitchcock Medical Center, Hanover, New Hampshire 03756. *Pediatrics* 1989 May, Vol. 83 (5), pp. 683–93.

The use of adrenocorticoids to reduce the morbidity associated with laryngotracheitis (croup) remains controversial despite ten published reports of randomized trials involving 1,286 patients. To determine whether, viewed in aggregate, these studies demonstrate a significant benefit of steroid treatment for this disorder, a meta-analysis of the nine methodologically satisfactory trials was performed. Clinical improvement 12 and 24 hours posttreatment and incidence of endotracheal intubation were evaluated. For each end point, an estimate of the overall effect was obtained by calculating a typical odds ratio and 95 per cent confidence interval. This analysis indicates that the use of steroids in children hospitalized with croup is associated with a significantly increased proportion of patients showing clinical improvement 12 hours (odds ratio = 2.25, 95 per cent confidence interval = 1.66, 3.06) and 24 hours (odds ratio = 3.19, 95 per cent confidence interval = 1.70, 5.99) posttreatment and a significantly reduced incidence of endotracheal intubation (odds ratio = 0.21, 95 per cent confidence interval = 0.05, 0.84). Higher initial doses of steroid (greater than or equal to 125 mg of cortisone or greater than or equal to 100 mg of hydrocortisone) were associated with a larger portion of patients improved 12 hours posttreatment than was seen with lower doses. These results support the use of steroids in the treatment of hospitalized children with croup and, in the absence of a randomized clinical trial of sufficient size, provide the most reliable estimate of the impact of steroid therapy on the morbidity associated with croup. In addition, the results of this meta-analysis may be used to estimate the number of subjects who would be required to conduct a randomized clinical trial of steroids for the treatment of croup. Author.

**Psychoacoustic abilities of subjects with unilateral and bilateral cochlear hearing impairments and their relationship to the ability to understand speech.** Glasberg, B. R., Moore, B. C. Department of Experimental Psychology, University of Cambridge, England. *Scandinavian Audiology (Supplement)* 1989, Vol. 32, pp. 1–25.

This paper is concerned with deficits in the ability to distinguish sounds, which accompany hearing loss of cochlear origin, and with the relationship of those deficits to the ability to understand speech in quiet and in background noise. Nine subjects with moderate unilateral cochlear hearing loss and six with moderate bilateral cochlear hearing loss took part in a series of psychoacoustic and speech perception tests. The impaired ears showed deficits in several of the psychoacoustic tests, including: detection of temporal gaps in bands of noise; frequency discrimination of pure tones; frequency discrimination of complex tones; and frequency selectivity as measured by the masking of tones by notched noise. The impaired ears showed near-normal performance in the detection of changes in intensity and for detecting temporal gaps in sinusoidal signals. Speech reception thresholds (SRTs—defined as the level of speech required for 50 per cent intelligibility) were measured both in quiet and in speech-shaped noise, and were invariably higher for the impaired than for the normal ears. Correlational analysis, principal-components analysis and multiple-regression analysis were used to explore the relationships between the psychoacoustic measures and the SRTs. The results suggest that SRTs in quiet are determined primarily by absolute thresholds as measured by the pure-tone audiogram. SRTs in noise are related more to supra-threshold discrimination abilities, such as the detection of temporal gaps in noise and the frequency discrimination of pure and complex tones, and to age. Possible clinical applications of the results are briefly discussed. Author.