

Abstract Selection

Since January, a selection of abstracts has appeared in each issue as an additional service to subscribers/readers. We are greatly indebted to the following additional Journals, their parent organisations and publishers for allowing us to publish abstracts which are of interest within our field and these are produced verbatim.

Acta Neurologica Scandinavica (Munksgaard International Publishers)
American Dental Association Journal (American Dental Association)
American Journal of Diseases of Children (American Medical Association)
American Journal of Human Genetics (University of Chicago Press)
American Journal of Surgery (Cahners Publishing Co. Inc., Medical-Health Care Group)
Archives of Environmental Health (Heldref Publications)
Archives of Internal Medicine (American Medical Association)
British Medical Bulletin (Churchill Livingstone Medical Journals)
Clinical Nephrology (Dustri-Verlag)
Clinical Orthopaedics and Related Research (J.B. Lippincott & Co.)
Clinical Science (The Medical Research Society & The Biochemical Society)
Critical Care Medicine (Society of Critical Care Medicine, Williams and Wilkins)
Cranio—Journal of Craniomandibular Practice (Williams & Wilkins)
Developmental Medicine & Child Neurology (Spastics Society—Mac Keith Press)
Drug Research (Arzneimittel-Forschung)
Infection (MMV Medizin Verlag)
Israel Journal of Medical Sciences
Journal of Bone & Joint Surgery—British Volume (British Editorial Society of Bone and Joint Surgery)
Journal of Clinical Pathology (British Medical Association)
Journal of Indian Council of Medical Research
Journal of Neurological Sciences (Edizioni Minerva Medica)
Journal of Pediatric Psychology (Plenum Publishing Corporation)
Journal of The Royal Naval Medical Service (Institute of Naval Medicine)
Journal of Tropical Medicine and Hygiene (Blackwell Scientific Publications Ltd.)
Medical Journal of Australia (Journal of the Australian Medical Association)
Pharmatherapeutica (Clayton-Wrey Publications Ltd.)
Thoracic & Cardiovascular Surgery (George Thieme. Verlag)

Non-group A streptococci in the pharynx. Pathogens or innocent bystanders? Hayden, G. F., Murphy, T. F., Hendley, J. O. Department of Pediatrics, Children's Medical Center, University of Virginia, Charlottesville 22908. *American Journal of Diseases of Children* 1989 Jul, Vol. 143 (7), pp. 794–7.

OBJECTIVE: To determine whether beta-hemolytic streptococci from groups other than A are an important cause of sporadic pharyngitis in children. **DESIGN:** Cross-sectional, case-referent survey. **SETTING:** General pediatric clinic at a military base in Ohio. **PARTICIPANTS:** One hundred fifty children with symptomatic pharyngitis and 150 controls matched for age and time of presentation over a 20-month study period. **INTERVENTIONS:** None. **MEASUREMENTS/MAIN RESULTS:** Anaerobic culture technique was used to improve isolation of beta-hemolytic streptococci. Group A beta-hemolytic streptococci were detected significantly more often among the ill children than among the controls (39 percent vs 16 percent, respectively). In contrast, non-group A beta-hemolytic streptococci were isolated in similar fre-

quency from the ill and control children (17 percent vs 21 percent, respectively). Non-group A beta-hemolytic streptococci from groups B, C, F, and G were each isolated in similar frequency among the ill and control children. The isolation rate of non-group A organisms increased with age among both patients and controls. **CONCLUSIONS:** Non-group A beta-hemolytic streptococci seemed not to be an important cause of sporadic pharyngitis in this pediatric population. Author.

Prolonged nasotracheal intubation and its association with inflammation of paranasal sinuses. Fassoulaki, A, Pamouktsoglou, P. Department of Intensive Care Unit, St. Savas Hospital, University of Athens, Medical School, Greece. *Anesthesia and Analgesia* 1989 Jul, Vol. 69 (1), pp. 916–8.

Sixteen critically ill patients whose tracheas were intubated through the nasal route were examined for paranasal sinusitis between the 2nd and 3rd day and again on the 8th day after intubation. Between the 2nd and 3rd days, six of the 16 patients developed either maxillary sinusitis alone (three of them) or sphenoid sinusitis (in the other three). By the 8th day, all patients had developed sinusitis involving at least one sinus. The most commonly affected sinuses were the maxillary (87 percent) and the sphenoid (87 percent) followed by the ethmoid (50 percent) and frontal (12.5 percent). On the day 8 after intubation, the nasotracheal tubes were removed and replaced by orotracheal tubes, or tracheostomies were performed. On day eight after extubation, 10 of the 16 patients were reexamined. Computer tomographic (CT) scan at this time revealed persistent sinusitis in tow. Long-term nasotracheal intubation is associated with sinusitis. Author.

Median forehead island skin flap for the correction of severely collapsed nose. Zhou, L. Y., Hu, Q. Y. Department of Plastic and Reconstructive Surgery, Shanghai Ninth People's Hospital, Shanghai Second Medical University, China. *Annals of Plastic Surgery* 1989 Jun, Vol. 22 (6), pp. 516–22.

Five cases of severely collapsed nose as a result of infection were corrected by excision of intranasal scar and lining the intranasal defect with median forehead island skin flaps based on supratrochlear vessels. Simultaneous bone grafting was undertaken to support the reexpanded nose. Clinical experiences are presented. Author.

Brainstem electric response audiometry: estimation of the amount of conductive hearing loss with and without use of the response threshold. van der Drift, J. F., van Zanten, G. A., Brocaar, M. P. Department of Otorhinolaryngology, Erasmus University, Rotterdam, The Netherlands. *Audiology* 1989, Vol. 28 (4), pp. 181–93.

Three aspects of brainstem response audiometry were investigated in the present study. (1) The brainstem response threshold was compared with the pure-tone audiogram in 40 patients with conductive hearing loss. The brainstem response threshold has a one-to-one relationship with the mean of the pure-tone thresholds at two and four kHz. The correlation coefficient in this comparison is 0.84 and the standard error of the estimate is 8.3 dB. Taking into account corresponding results in cochlear hearing loss (Drift *et al.*: *Audiology* 26: 1–10, 1987) it is concluded that the brainstem response threshold provides a good estimate of the amount of peripheral hearing loss, independent of the type of hearing loss. (2) It was shown (Drift *et al.*: *Audiology* 27: 260–270, 1988) that different types of peripheral hearing loss can be distinguished reliably with brainstem response audiometry. Parameters relevant for this distinction were the horizontal shift of the latency-level curve (1(L) curve), that of its derivative and the response threshold. In the clinical situation measurement of the response threshold is not always

possible due to restlessness of the patient. To simulate this situation we randomly truncated the lower parts of the 1(L) curves of quiet patients. The test group consisted of 22 adult normally hearing subjects, 79 patients with cochlear hearing loss, 40 with conductive hearing loss and 22 with mixed hearing loss. Linear discriminant analysis was applied to the horizontal shift of the 1(L) curve and of its derivative. The brainstem diagnosis 'normal hearing' correctly excludes a conductive hearing loss in 98 per cent of the cases and the brainstem diagnosis 'cochlear hearing loss' does so in 79 per cent. The brainstem diagnosis 'conductive hearing loss' correctly predicts a conductive component of hearing loss in 94 per cent of the cases and the diagnosis 'mixed hearing loss' does so in 90 per cent. The distinction between cochlear hearing loss and normal hearing is not reliable, neither is the distinction between conductive and mixed hearing loss. (3) The amount of the conductive component of hearing loss can be estimated by the horizontal shift of the 1(L) curve. Statistical comparison with the mean of the air-bone gaps at two and four kHz gave a correlation coefficient of 0.77, a standard error of the estimate of 9.7 dB, and a slope of the regression line of 0.93. An overestimation of about 7 dB has to be taken into account in case of mixed hearing loss. Author.

Role of high-frequency audiometry in the early detection of ototoxicity. II. Clinical Aspects. Dreschler, W. A., van der Hulst, R. J., Tange, R. A., Urbanus, N. A. Department of Otolaryngology, Academic Medical Center, University of Amsterdam, The Netherlands. *Audiology* 1989, Vol. 28 (4), pp. 211–20.

As a supplement to a previous paper (Dreschler *et al.*, *Audiology* 1985; 24:387–395) high-frequency (HF) audiometry was applied to compare the ototoxic effects of two different drug administration protocols for cis-platinum (CDDP). In both subgroups, HF audiometry considerably enhanced the early detection of ototoxicity. Marked differences between treatments have been established both in the pattern of onset of the damage and in the relation between dose and damage severity. For subjects treated with platinum derivatives, the thresholds at 12 and 14 kHz prove to be especially important. The results suggest that for these subjects the measurement of only a single frequency may be considered: with a minimum of effort, most of the increased sensitivity for a complete HF audiogram can be obtained. Finally, the relation between threshold deteriorations above 8 kHz and threshold deteriorations in the conventional range of audiometric frequencies has been investigated. Author.

Electrically evoked responses in cochlear implant patients. Pelizzone, M., Kasper, A., Montandon, P. Clinics of Otorhinolaryngology, Cantonal University Hospital, Geneva, Switzerland. *Audiology* 1989, Vol. 28 (4), pp. 230–8.

Highly reproducible recordings of evoked responses elicited by electrical stimulation of the auditory nerve were obtained in a group of four totally deaf patients implanted with a multichannel intracochlear prosthesis. They were compared to auditory evoked responses obtained in a normal-hearing subject tested with the same equipment. The most striking observation drawn from these data is certainly the close resemblance, at all latencies, between evoked responses elicited by electrical stimulation and those elicited by acoustic stimulation. The remarkable correspondence of waveform morphology, waveform amplitude and interpeak latencies provides indirect evidence that the same sequence of events is triggered in the central auditory system in both cases. Those aspects of the responses which differ significantly are easily interpreted by the physical and physiological properties of the different types of stimulation. Author.

Adaptation to vection-induced symptoms of motion sickness. Stern, R. M., Hu, S. Q., Vasey, M. W., Koch, K. L. Department of Psychology, Pennsylvania State University, University Park, PA 16802. *Aviation, Space and Environmental Medicine* 1989 Jun, Vol. 60 (6), pp. 566–72.

The visual-vestibular-proprioceptive sensory mismatch of vection provokes motion sickness in approximately 60 per cent of healthy subjects. Approximately 60 per cent of astronauts experience motion sickness in microgravity where vestibular/otolith function is altered. The purpose of this study was to determine the extent to which symptoms of motion sickness and tachygastric, an abnormal 4–9 cpm rhythm of the stomach, decrease or adapt during three

repeated exposures to a rotating circular vection drum. Subjects sat in the drum for 45 min: 15 min baseline, 15 min drum rotation at 60 degrees.s⁻¹, and 15 min recovery. Gastric myoelectric activity was continuously recorded with the electrogastragram (EGG). Symptom reports were obtained during rotation. In Experiment I, 10 subjects were exposed to the drum three times with intersession intervals of 4–24 d. They failed to show adaptation based on subjective reports and all showed tachygastric. In Experiment II, 14 new subjects were exposed to the drum three times with intersession intervals of 48 h. The group experienced a reduction in symptoms and tachygastric with repeated exposure to the drum. Thus, symptomatic and physiological improvement occurred after training in subjects susceptible to vection-induced motion sickness. Pre-flight adaptation to visual-vestibular sensory mismatch may reduce motion sickness experienced in the environment of microgravity. Author.

Noise trauma in the aetiology of acoustic neuromas in men in Los Angeles County, 1978–1985. Preston Martin, S., Thomas, D. C., Wright, W. E., Hendeson, B. E. Department of Preventive Medicine, University of Southern California School of Medicine, Los Angeles, 90033. *British Journal of Cancer* 1989 May, Vol. 59 (5), pp. 783–6.

The aim of this study was to investigate whether occupational and other suggested brain tumour risk factors relate to the development of acoustic neuromas (AN) in men. Responses to interviews were compared for 86 AN patients and 86 neighbourhood controls. During the period 10 or more years before the year of diagnosis of the case, more cases than controls had a job involving exposure to extremely loud noise; noise exposure was determined by a blinded review of job histories and linkage to the National Occupational Hazards Survey data base (odds ratio (OR) = 2.2, 95 per cent confidence interval, (CI) = 1.12, 4.67). A dose-response analysis showed an increase in risk related to number of years of job exposure to extremely loud noise (P for trend = 0.02) with an OR of 13.2 (CI = 2.01, 86.98) for exposure for 20 or more years during the period up to 10 years before diagnosis. We propose that the findings in this study which identify noise as a risk factor support the hypothesis that mechanical trauma may contribute to tumorigenesis. Author.

Factors delaying the diagnosis of oral and oropharyngeal carcinomas. Guggenheimer, J., Verbin, R. S., Johnson, J. T., Horkowitz, C. A., Myers, E. N. Department of Diagnostic Services, University of Pittsburgh, School of Dental Medicine, Pennsylvania 15261. *Cancer* 1989 Aug 15, Vol. 64 (4), pp. 932–5.

Most squamous cell carcinomas of the oral cavity and oropharynx are not diagnosed until they have attained at least the T2 stage (greater than 2.0 cm). This study identifies factors which may contribute to the delayed diagnosis of these tumors, despite the fact that they frequently arise at sites readily accessible to examination. Personal interviews of 149 patients with oral and oropharyngeal squamous cell carcinoma revealed delays by patients of one day to more than one year (mean, 17 weeks) before seeking care. Furthermore, delay by doctors occurred in 45 instances (20 per cent). Neither short nor long delays had a statistically significant relationship to tumor T stage at the time of diagnosis. The length of patient delay was also not related to age, gender, amount of education, or history of alcohol consumption. The authors concluded that the early carcinomas were probably asymptomatic and subsequent manifestations were commonly misinterpreted as benign or innocuous oral/dental problems. These inconspicuous or misleading perceptions may be primarily responsible for the advanced stages of these tumors at the time of discovery. Emphasis must, therefore, be placed upon gaining access to high-risk individuals for periodic oral and oropharyngeal examinations and upon educational efforts to increase the skill of primary health care providers in recognizing this problem. Author.

Infectious mononucleosis complicated by necrotizing epiglottitis, dysphagia, and pneumonia. Biem, J., Roy, L., Halik, J., Hoffstein, V. Department of Medicine, St. Michael's Hospital, University of Toronto, Canada. *Chest* 1989 Jul, vol. 96 (1), pp. 204–5. Although infectious mononucleosis is usually a benign illness, life-threatening complications may occur. We describe a 17-year-old pregnant girl who developed necrotizing epiglottitis and dysphagia

progressing to aspiration pneumonia and respiratory failure. The factors predisposing to this life-threatening complication are discussed. Author.

Unique inheritance of streptomycin-induced deafness. Higashi, K. Department of Otolaryngology, School of Medicine, Akita University, Japan. *Clinical Genetics* 1989 Jun, Vol. 35 (6), pp. 433–6. Analysis of reported families which include two or more members with streptomycin-induced hearing loss reveals that the trait of high susceptibility of cochlea to streptomycin is transmitted primarily through females. This is not explained by ordinary Mendelian inheritance; rather it is best understood by extranuclear inheritance. Author.

Infarction of the superior temporal gyrus: a description of auditory evoked potential latency and amplitude topology. Pool, I. K. D., finitzo, T., Hong, C. T., Rogers, J., Pickett, R. B. Neuroscience Research Center, University of Texas, Dallas. *Ear and Hearing* 1989 Jun, Vol. 10 (3), pp. 144–52.

P1 and N1 of the cortical auditory evoked potential (AEP) were studied with multiple electrodes in 10 normal subjects and six patients with left middle cerebral artery infarction. Patients were selected based on neurological examination and on CT scans showing both (1) infarction limited to the vascular territory and (2) involvement of posterior portion of superior temporal gyrus. Waveforms recorded from C2, Cz, and C4 were examined for peak latency and amplitude of P1 and N1 on all subjects. Topographic displays of amplitude over P1 and N1 latency ranges were also examined. In normals, P1 was identified in nine of the 10 subjects at all three electrode sites. In patients, P1 was identified at C3 in only one of the six. N1 was present at all three electrodes in the 10 normal subjects and in five of the six patients. The remaining patient had N1 at C4 and Cz only. Examination of amplitude topology showed as asymmetric evolution of P1 and N1 in the patients. This asymmetry was not present in normals. The results of this study are consistent with theory that P1 arises from primary auditory cortex. Results further suggest multiple generators for N1. Additional study correlating topographic display from multichannel recordings with CT or MRI in brain-injured patients may bring more insight into N1 generators. Author.

The clinical assessment of obscure auditory dysfunction—1. Auditory and psychological factors. Saunders, G. H., Haggard, M. P. MRC Institute of Hearing Research, University of Nottingham, University Park, England. *Ear and Hearing* 1989 Jun, Vol. 10 (3), pp. 200–8.

We define obscure auditory dysfunction (OAD) as the clinical presentation of reported difficulty understanding speech in the presence of noise accompanied by clinically 'normal' hearing thresholds, and no other obvious cause. The term deliberately avoids particular pathophysiological connotations. A detailed characterization of such patients was undertaken as the basis for future diagnosis and management of OAD by clinicians. Twenty patients were compared with 20 pairs of controls (matched for age, sex, educational level, and noise exposure) on tests of auditory, linguistic, and psychological function. Patients showed a genuine performance deficit on a speech-in-noise task, due in part to minor auditory dysfunction and poor linguistic ability. Their high level of self-rated disability and handicap cannot, however, be entirely explained by this genuine deficit. An anxious personality and a history of otological symptoms typified the patient group; either or both have presumably contributed to patients' seeking of medical or audiological advice. OAD is thus a multifactorial syndrome with contributions from auditory, psychological and linguistic factors. The variance in (and correlation between) performance levels on two sentence-in-noise tests, present only within the patient group, indicates that these patients are not a homogenous group. Author.

Audiologic findings in Pierre Robin sequence. Gould, H. J. Memphis Speech and Hearing Center, Memphis State University, Tennessee. *Ear and Hearing* 1989 Jun, Vol. 10 (3), pp. 211–3.

The hearing status of 20 individuals with Pierre Robin Sequence (micrognathia, cleft palate, and glossoptosis leading to respiratory distress and feeding difficulty) was examined and compared to a sample exhibiting only isolated cleft palate. The results indicate that there is no difference in the prevalence or degree of hearing loss in these two groups. Author.

Epistaxis and leprosy. Soni, N. K. P. B. M. Hospital, Bikaner, Rajasthan. *Indian Journal of Leprosy* 1989 Oct, Vol. 60 (4), pp. 562–5.

Forty-four leprosy patients with epistaxis were analysed. Aetiopathogenesis of epistaxis in leprosy is discussed in the light of available literature. It has been suggested that epistaxis is more frequent and severe in leprosy patients and more liable to have complications. Epistaxis in leprosy with nasal lesions may alarm the physician that patient has some systemic disorder. Author.

Chronic infection with Epstein-Barr virus, Chlamydia and Hepatitis A virus, terminating in cirrhosis and nasopharyngeal carcinoma. Ariad, S., Yanai, I., Sobel, R. Department of Medicine C, Soroka Medical Center, Beer Sheva, Israel. *Israel Journal of Medical Sciences* 1989 Jun, Vol. 25 (6), pp. 328–31.

We describe a 27-year-old woman who presented with infertility, and over the subsequent seven years developed chronic Epstein-Barr virus infection, hepatitis A, cirrhosis and nasopharyngeal carcinoma. Serological evidence of chronic infection with Chlamydia, Epstein-Barr virus and hepatitis A virus was documented. Author.

Detection of gaps in sinusoids and pulse trains by patients with cochlear implants. Shannon, R. V. Boys Town National Institute, Omaha, Nebraska 68131. *Journal of the Acoustical Society of America* 1989 Jun, Vol. 85 (6), pp. 2587–92.

Gap detection thresholds were measured in patients with the Nucleus and Symbion cochlear implants as a function of several current waveform parameters. Detection of gaps in an electrical sinusoidal stimulus or in a train of biphasic pulses by implanted patients was similar to detection of gaps in comparable acoustic stimuli by normal listeners. Threshold gaps were 20–50 ms for low-level stimuli and improved with stimulus level to 2–5 ms for high-level stimuli. Gap detection performance was not affected by the electrode position in the cochlea or by the distance between stimulating electrodes. The data from most patients were well fitted by a trading relation between the duration of the gap and the square of stimulus intensity, indicating energy detection. The similarity of gap thresholds for normal subjects and implant patients suggests that many details of the peripheral neural activity are probably not important for this task, and that there is no retrocochlear loss of auditory temporal resolution with sensorineural hearing loss. Author.

Speech perception studies using a multichannel electro tactile speech processor, residual hearing and lipreading. Cowan, R. S., Alcantara, J. I., Whitford, L. A., Blamey, P. J., Clark, G. M. Department of Otolaryngology, University of Melbourne, Royal Victorian Eye and Ear Hospital, Australia. *Journal of Acoustical Society of America* 1989 Jun, Vol. 85 (6), pp. 2593–607.

Three studies are reported on the speech perception of normally hearing and hearing-impaired adults using combinations of visual, auditory and tactile input. In study 1, mean scores for four normally hearing subjects showed that addition of tactile information, provided through the multichannel electro tactile speech processor, to either audition alone (300-Hz low-pass-filtered speech) or lipreading plus audition resulted in significant improvements in phoneme and word discrimination scores. Information transmission analyses demonstrated the effectiveness of the tactile aid in providing cues to duration, F1 and F2 features for vowels, and manner of articulation features for consonants, especially features requiring detection and discrimination of high-frequency information. In study 2, six different cutoff frequencies were used for a low-pass-filtered auditory signal. Mean scores for vowel and consonant identification were significantly higher with the addition of tactile input to audition alone at each cutoff frequency up to 1500 Hz. The mean speechtracking rate was also significantly increased by the additional tactile input up to 1500 Hz. Study 3 examined speech discrimination of three hearing-impaired adults. Additional information available through the tactile aid was shown to improve speech discrimination scores; however, the degree of increase was inversely related to the level of residual hearing. Results indicate that the electro tactile aid may be useful for patients with little residual hearing and for the severely to profoundly hearing impaired, who could benefit from the high-frequency information presented through the tactile modality, but unavailable through hearing aids. Author.

Brainstem auditory evoked potentials: correlation between CT midbrain-pontine lesion sites and abolition of wave V or the IV-V complex. Chu, N. S. Department of Neurology, Chang Gung Medical College and Memorial Hospital, Taipei, Taiwan, R.O.C. *Journal of Neurological Sciences* 1989 Jun, Vol. 91 (1-2), pp. 165-77.

Correlations between CT lesion sites and selective abolition of BAEP wave V or the IV-V complex were made in 16 patients who had discrete midbrain-pontine hemorrhages or tumors. Waves IV and V were consistently abolished by lesions involving the dorsolateral tegmentum of the midbrain-pontine junction area and the upper pons. The abolition of these waves was ipsilateral to the side of the monaural stimulation. Wave V or the IV-V complex was not affected by lesions involving the inferior colliculus, the central pons or the area dorsolateral to the aqueduct. It is concluded that an intact dorsolateral area of the upper pons is a prerequisite for waves IV and V to occur. Author.

Transcranial resection of tumors of the paranasal sinuses and nasal cavity. Blacklock, J. B., Weber, R. S., Lee, Y. Y., Goepfert, H. Section of Neurosurgery, University of Texas M.D. Anderson Cancer Center, Houston. *Journal of Neurosurgery* 1989 Jul, Vol. 71 (1), pp. 10-5.

Combined cranial and facial procedures for resection of malignancies of the paranasal sinuses and nasal cavity have been used with variable success and complication rates in the last 25 years. A series of nine patients undergoing 10 exclusively transcranial procedures for these tumors is presented, and an effective technique for reconstruction without free tissue transfer is described. The patients in this series suffered no major complications, and all have remained free of disease during the short follow-up period. The technique described in this report offers the advantage of wide exposure, symmetrical approach to the superstructures of the face and orbits, the potential for resection of a large portion of the anterior cranial floor, and substantial reconstruction which is a major factor in avoiding complications. Author.

Case-control study of nasal cancer in workers employed in wood-related industries. Viren, J. R., Imbus, H. R. Health & Hygiene, Inc., Greensboro, SC 27407. *Journal of Occupational Medicine* 1989 Jan, Vol. 31 (1), pp. 35-40.

A case-control study of nasal cancer deaths in the states of Washington, Oregon, Mississippi, and North Carolina was undertaken to determine whether there was an excess of nasal cancer deaths occurring among workers in wood-related industries. This involved analysis of 536 cases of nasal cancer deaths occurring from 1962 to 1977, compared with 1,072 deaths matched for control. The study showed no overall excess of deaths from nasal cancer in wood-related industries, including furniture manufacturing. There was a statistically significant excess of deaths from nasal cancer occurring in lumber and wood products (risk ratio = 1.95, P less than .05); however, this was largely due to excess in these industries occurring in the states of North Carolina and Mississippi. Summarizing the available evidence of this study, there seems to be no association between nasal cancer and industry/occupation normally identified with wood dust. Author.

Cholesteatoma (keratoma) of the maxillary sinus: report of a case. Sadoff, R. S., Pliskin, A. Nassau County Medical Center, East Meadow, New York. *Journal of Oral and Maxillofacial Surgery* 1989 Aug, Vol. 47 (8), pp. 873-6.

A rare case of cholesteatoma of the maxillary sinus is presented, and its differential diagnosis, etiology and treatment are discussed briefly. Author.

Arthrographic findings in the temporomandibular joint in patients with rheumatic disease. Larheim, T. A., Bjornland, T. Department of Oral Radiology, Faculty of Dentistry, University of Oslo, Norway. *Journal of Oral and Maxillofacial Surgery* 1989 Aug, Vol. 47 (8), pp. 780-4.

Hypocycloidal multisection tomography and lower-space arthrography with videofluoroscopy were performed on 20 symptomatic temporomandibular joints (TMJs) of 17 patients. All patients (16 women, one man, aged 17 to 38 years) had definite or suspected rheumatoid arthritis (adult or juvenile type), ankylosing spondylitis, or psoriatic arthropathy. Bone abnormalities were

found in 14 TMJs, primarily cortical erosion (11 joints), but also condylar flattening (three joints). Irregularity in outline of the contrast material, bone contour-contrast material gaps, evidence of adherent discs and/or small joint compartments indicated synovial hyperplasia/pannus formation in 15 joints. Six of these (four with normal disc position) showed perforation between the joint compartments. In those with normal disc position the perforation seemed to occur in the central portion. Ten of the 15 joints had normal disc position; the remaining five had anterior disc displacement without reduction. One joint showed only disc displacement. Most joints with bone abnormalities (12 of 14) showed arthrographic signs of rheumatic involvement. Such signs were also observed in two of the six joints with no bone abnormalities, indicating the value of arthrography in the early diagnosis of patients with rheumatic disease and TMJ problems. Author.

Subacute sinusitis in children. Wald, E. R., Byers, C., Guerra, N., Casselbrant, M., Beste D. Department of Pediatrics, University of Pittsburgh School of Medicine, Children's Hospital, PA 15213 *Journal of Pediatrics* 1989 Jul, Vol. 115 (1), pp. 28-32.

The bacteriologic characteristics of subacute maxillary sinusitis have not been delineated in the pediatric age group. Forty children between the ages of two and 12 years with respiratory symptoms for at least 30 but less than 120 days were evaluated. Nasal discharge and cough were the most prominent symptoms. Common radiographic findings were diffuse opacification and mucosal thickenings. Sinus aspiration was performed on 52 sinuses of 40 children. Bacterial colony counts greater than or equal to 10(4) colony-forming units per milliliter were found in 30 (58 per cent) of 52 sinus aspirates obtained from 26 (65 per cent) children. The bacterial species most commonly recovered were *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Branhamella catarrhalis*. Twenty-five per cent of the maxillary sinus isolates were beta-lactamase producing; however, many of these were recovered from patients who had recently received antimicrobial therapy. Subacute and acute maxillary sinusitis are similar in regard to causative organism, clinical presentation, and radiographic findings. Author.

Pseudotumor of the sellar and parasellar areas. Gartman, J. J. Jr., Powers, S. K., Fortune, M. Division of Neurological Surgery, University of North Carolina, Chapel Hill. *Neurosurgery* 1989 Jun, Vol. 24 (6), pp. 896-901.

A 54-year-old woman who had symptoms of intermittent meningeal irritation and hypopituitarism was found to have a sellar mass histologically consistent with pseudotumor. The lesion appears to have originated in the sphenoid sinus and subsequently to have spread intracranially, causing bony erosion. To our knowledge, this is the first description of pseudotumor occurring as a sellar mass. Author.

Cervical myelopathy secondary to movement disorders: case report. el Mallakh, R. S., Rao, K., Barwick, M. Department of Neurology, University of Connecticut Health Center, Farmington. *Neurosurgery* 1989 Jun, Vol. 24 (6), pp. 902-5.

Involuntary cervical movements that result in cervical spondylosis and secondary myelopathy have not been adequately emphasized in the literature. We present two patients with cerebral palsy and long histories of involuntary movements who developed cervical myelopathy. We use those illustrative cases to emphasize that in the presence of underlying neurological symptoms and signs due to advanced cerebral palsy, any recent worsening should provoke a higher index of suspicion for myelopathy. The mechanics of neck movements and surgical treatment are discussed. Author.

Diagnosis and treatment of an odontoid fracture in a patient with polyostotic fibrous dysplasia: case report. Strompro, B. E., Alksne, J. F., Press, G. A. Division of Neurosurgery, University of California, San Diego Medical Center. *Neurosurgery* 1989 Jun, Vol. 24 (6), pp. 905-9.

Fibrous dysplasia of the cervical spine is rare. No prior reports have discussed odontoid fractures in the setting of fibrous dysplasia. We describe a 26-year-old man who suffered a traumatic odontoid fracture in an area of preexisting fibrous dysplasia. The patient was treated conservatively in a sterno-occipito-mandibular immobilizer brace with a good result. A review of fibrous dysplasia is pre-

sented. Alternative methods of diagnosis and treatment options in our patient are discussed. Author.

Radiation-induced schwannomas. Rubinstein, A. B., Reichenthal, E., Borohov, H. Department of Neurosurgery, Beilinson Medical Center, Israel. *Neurosurgery* 1989 Jun, Vol. 24 (6), pp. 929–32. The histopathology and clinical course of three patients with schwannomas of the brain and high cervical cord after therapeutic irradiation for intracranial malignancy and for ringworm of the scalp are described. Earlier reports in the literature indicated that radiation of the scalp may induce tumors in the head and neck. It is therefore suggested that therapeutic irradiation in these instances was a causative factor in the genesis of these tumors. Author.

Panoramic radiography for temporomandibular joint arthrography: a description of arthropanoramograms. Abramovitch, K., Langlais, R. P., Dolwick, M. F. Department of Pathology and Radiology, University of Texas Dental Branch, Houston. *Oral Surgery, Oral Medicine, Oral Pathology* 1989 Jun, Vol. 67 (6), pp. 775–80.

TMJ arthrograms done with panoramic radiography, i.e., arthropanoramography, can demonstrate intracapsular disk displacement and perforation pathoses. These views are very practical for inferior synovial cavity arthrograms performed in the dental operator since panoramic radiographic machines have become common in modern dental practices. Specific advantages of arthropanoramography include the decreased financial cost and decreased radiation exposure to the patient. Arthropanoramography does not replace tomography or videofluoroscopy in TMJ arthrography. It is, however, described as a simple alternative to the more conventional forms of arthrography. Author.

Ameloblastoma in young persons: a clinicopathologic analysis and etiologic investigation. Kahn, M. A. Department of Pathology, School of Medicine, Temple University, Philadelphia, Pa. *Oral Surgery, Oral Medicine, Oral Pathology* 1989 Jun, Vol. 67 (6), pp. 706–15.

Ameloblastoma, an odontogenic tumour of ectodermal origin, has been reported to arise, on rare occasions, in a primordial or dentigerous cyst of a young person. Numerous authors have suggested differing nomenclatures for these ameloblastomas (e.g. mural, unicystic, monocystic, intracystic, cystogenic, cystic, plexiform unicystic) and have sought to describe and classify the clinical and histopathologic features. These tumours have been characterized as a distinct variant exhibiting less aggressive behaviour and a lower rate of recurrence than conventional ameloblastoma. Furthermore, various aetiologic factors have been proposed for these cystic ameloblastomas, including (1) non-specific irritational factors such as extraction, caries, trauma, infection, inflammation, or tooth eruption; (2) nutritional deficit disorders; and (3) viral infection. The files of the combined accessional cases of Emory University's and Temple University's oral pathology laboratories were searched and a review of the literature was performed. Thirty-eight cases of mandibular ameloblastoma (37 intraosseous, one peripheral) in persons 19 years old and younger were found from a combined total of 311 accessional cases of ameloblastoma (12.3 per cent). The average age at diagnosis was 10.4 years for the 18 males and 20 females. Of the 33 cases in which race was stated, 19 (57.6 per cent) were white and 14 (42.4 per cent) were black. In the 28 cases in which a clinical diagnosis was offered, fifteen (53.6 per cent) were thought to be dentigerous cysts. Ten cases from patients less than 19 years old were investigated by means of an immunohistochemical staining technique for the detection of human papilloma virus (HPV) genus-specific structural antigen in formalin-fixed, paraffin-embedded tissue. Three of the ten cases (cases 31, 37 and 38) were positive for HPV capsid antigen, whereas none of ten randomly selected ameloblastomas in adults was positive. A discussion of the clinical and histopathologic comparative findings, with emphasis on treatment results and possible HPV aetiology, is included. The preliminary nature of finding HPV in the tumour cells is stressed, with recommendation for further verification and typing with the more sensitive *in situ* hybridization technique. Author.

Upper airway measurements during inspiration and expiration in

infants. Gunn, T. R., Tonkin, S. L. St Helens Hospital, Auckland University, New Zealand. *Pediatrics* 1989 Jul, Vol. 84 (1), pp. 73–7.

Accurate measurements of upper airway of the infant are important but are difficult to obtain reliably because of the normal variation that occurs during respiration. X-ray films of the lateral upper airway were obtained during inspiration and expiration in healthy infants, by using as a timing device a respiration monitor which was wired to the x-ray machine and was attached to the abdominal wall of the infant. Cephalometric measurements were made of 44 'normal' full-term neonates and 29 infants at six weeks of age. Despite significant differences in head circumference between the sexes, only the nasion to sella length was significantly longer in the boys (P less than .01). The lateral upper airway measurements were independent of weight, head circumference, and sex in the neonates and infants at six weeks of age but were significantly smaller during inspiration than expiration (P less than 0.01). The measurements progressively increased from the middle to the posterior airway space at both ages. The middle airway space behind the caudal end of the hard palate was smaller during inspiration at six weeks of age compared to the neonate (P less than .01). During expiration, the posterior airway space was larger at six weeks compared to the neonate (P less than 0.01). The method described in this report enables reliable roentgenographic measurements to be made of the upper airway of the infant; normal values for the changes during inspiration and expiration are provided. This may assist in the evaluation of infants with suspected upper airway obstruction. Author.

Stab wounds to the neck: role of angiography. Hartling, R. P., McGahan, J. P., Lindfors, K. K., Blaisdell, F. W. Department of Radiology, University of California, Davis, Medical Center Sacramento. *Radiology* 1989 Jul, Vol. 172 (1), pp. 79–82.

Angiographic findings in 61 stab wounds to the neck were correlated with specific clinical findings. Eighteen of the stab wounds were associated with one or more major physical findings that included (a) pulse deficit, (b) active bleeding or expanding hematoma, (c) bruit or murmur, (d) neurologic deficit, or (e) hypotension. Of these 18 wounds, only two involved significant vascular injuries. The other 43 stab wounds were associated with minor physical findings, with the only indications for angiography being nonexpanding hematoma or proximity of trauma to major vessels. None of these 43 wounds involved significant vascular injury. Author.

Chronically obstructed sinonasal secretions: observations on T1 and T2 shortening. Som, P. M., Dillon, W. P., Fullerton, G. D., Zimmerman, R. A., Rajagopalan, B., Marom, Z. Department of Radiology, Mount Sinai Medical Center, City University of New York, NY 10029. *Radiology* 1989 Aug, Vol. 172 (2), pp. 515–20.

Clinically assessed chronic proteinaceous sinonasal secretions usually have long T1 and T2 relaxation times reflecting their high water content. However, in some cases variable combinations of short and long T1 and T2 relaxation times are found. To study the causes of these findings, the magnetic resonance (MR) images of 41 patients with surgically proved, chronically obstructed sinonasal secretions were studied. The relative signal intensities on both T1- and T2-weighted sequences of the sinus specimens were correlated with the gross viscosity of the specimens at surgery. Ten specimens were collected that were not contaminated with either blood or saline. UV spectrophotometric analysis of four of these samples excluded the presence of methemoglobin. Total protein content was determined in five samples, and *in vitro* T1 and T2 values were measured in one sample. These T1 and T2 relaxation times were accurately predicted with use of a standard pure lysozyme protein solution with the same concentration as the specimen. In addition, the observed T1- and T2-weighted signal intensities on the 41 MR images were predicted from an analysis of pure protein solutions. This study concludes that the primary causes of the variable T1 and T2 relaxation times of chronic sinonasal secretions are the macromolecular protein concentration, the amount of free water, and the specimen viscosity. Furthermore, an orderly and predictable transition of these signal intensities occurs over time. Author.

Neurofibromatosis types 1 and 2: cranial MR findings. Aoki, S., Barkovich, A. J., Nishimura, K., Kjos, B. O., Machida, T.,

Cogen, P., Edwards, M., Norman, D. Department of Radiology, Faculty of Medicine, University of Tokyo, Japan. *Radiology* 1989 Aug, Vol. 172 (2), pp. 527-34.

Neurofibromatosis 1 (NF-1) (von Recklinghausen disease) and neurofibromatosis 2 (NF-2) (bilateral acoustic neurofibromatosis) have been recently recognized to be distinct through genetic linkages. The authors compared the cranial magnetic resonance (MR) images of 53 patients with NF-1 and 11 with NF-2. In the NF-1 group, MR imaging revealed 19 patients with optic gliomas and eight with parenchymal gliomas. In 32 patients, foci of prolonged T2, similar to those reported previously as hamartomas, were identified in the cerebellar peduncles, globus pallidus, midbrain, and other locations. The frequency of these foci was related to both age and the presence of optic gliomas. In the NF-2 group, MR imaging revealed eight patients with cranial nerve schwannomas and six with meningiomas (in addition to acoustic schwannomas in all 11). These findings demonstrate that NF-1 and NF-2 are different diseases requiring different imaging protocols. NF-1 seems to be associated with tumors of astrocytes and neurons and NF-2 with tumors of meninges and Schwann cells. Author.

Change in the summing potential and action potential during the fluctuation of hearing in Meniere's disease. Asai, H., Mori, N. Department of Otolaryngology, Osaka University Medical School, Japan. *Scandinavian Audiology* 1989, Vol. 18 (1), pp. 13-7.

Summing potential (SP) and action potential (AP) were monitored by extratympanic electrocochleography (ECoG) during the fluctuation of hearing in eight patients with Meniere's disease. The relationship of SP and AP parameters to pure-tone hearing threshold level was examined. The correlational analysis revealed the following: AP amplitude decreases with increase in the hearing threshold level at higher frequencies (2-8 kHz), whereas it alters independently of the change in the hearing threshold level at lower frequencies (0.25-1 kHz). -SP amplitude is unchanged irrespective of changes in the hearing threshold level at any frequency. The ratio of -SP to AP amplitude increases with increase in the hearing threshold level at higher frequencies (2-8 kHz), whereas it alters independently of the change in the hearing threshold level at lower frequencies (0.25-1 kHz). Author.

Evoked acoustic emissions in high-frequency vs. low/medium-frequency hearing loss. Lind, O. and Randa, J. Department of Otolaryngology/Head and Neck Surgery, Haukeland Sykehus, University of Bergen, Norway. *Scandinavian Audiology* 1989, Vol. 18 (1), pp. 21-5.

Evoked otoacoustic emissions have been recorded from ears with high- and low-frequency hearing losses using a simple technique with fixed stimulus intensity and no suppression of stimulus artifact. Ears with low/medium frequency hearing loss exceeding 40 dB HL generate responses ending before 17.5 ms after stimulus onset. This may be used for testing of low/medium frequency hearing in ears where BRA indicates normal or only slightly impaired high-frequency hearing. Interrelationships between various response parameters and hearing losses have not been demonstrated statistically. Author.

Validity of bone conduction stimulated ABR, MLR and otoacoustic emissions. Collet, L., Chanal, J. M., Hellal, H., Gartner, M. and Morgon, A. Neurosurgery Explorations Laboratory, Pavilion U, Hopital Edouard Herriot, Lyon, France. *Scandinavian Audiology* 1989, Vol. 18 (1), pp. 43-6.

The present study considers the validity of objective auditory investigation via bone conduction. Auditory Brainstem Responses (ABR) and Middle Latency Response (MLR) were recorded in response to a bone vibrator stimulation with or without continuous bilateral air white noise masking. In all cases, such masking was found to result in an absence of recorded evoked potentials. It shows that under bone-conducted stimulation the evoked potential recorded is purely auditory, with no additional mechanical somatosensory component. In a further study, the feasibility of otoacoustic emissions (OAEs) via bone conduction is demonstrated. These OAEs are, for a given subject, comparable to those found for air-transmission stimulation. Author.

Study of the effects of simultaneous exposure to noise and carbon disulfide on workers' hearing. Morata, T. C. Program of Graduate Studies in Communication Disorders, Pontificia Universidade Catolica de Sao Paulo, Brazil. *Scandinavian Audiology* 1989, Vol. 18 (1), pp. 53-8.

The aim of this study was to explore the effects of simultaneous exposure to noise and carbon disulfide on workers' hearing and balance. The study was conducted by interviews and by audiometric and balance tests on workers in a rayon factory in the city of Sao Paulo, Brazil (n = 258). The workers studied had a history of exposure both to excessive noise levels (86-89 dBA) and to excessive levels of carbon disulfide (89.92 mg./m.³). The percentage of hearing loss found was much higher than expected for this occupational activity, which reinforced the possible connection between the exposure to noise and carbon disulfide. Author.