

Abstract Selection

An analytic method for evaluating condylar position in the TMJ and its application to orthodontic patients with painful clicking. Sakuda, M., Tanne, K., Tanaka, E., Takasugi, H. Department of Orthodontics, Osaka University, Faculty of Dentistry, Japan. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1992) Jan, Vol. 101 (1), pp. 88–96.

The purpose of this study was to develop a new method for evaluating the three-dimensional position of the mandibular condyle relative to the glenoid fossa and further to investigate its clinical application to orthodontic patients with temporomandibular disorders (TMD). A three-dimensional configuration of the temporomandibular joint was constructed by 108 triangles for the condyle and 180 triangles for the glenoid fossa. The shortest distance between the condyle and glenoid fossa (CGFD) was calculated in the model along a line perpendicular to the centre of gravity of a triangle on the condyle. The CGFD was determined in the anterior, posterior, middle, lateral, and medial areas on the condyle. Preliminary investigation revealed that the present technique is accurate, regardless of condylar rotation and/or inclination to the tomographic table. The technique was applied to the diagnosis of orthodontic patients with painful clicking and TMD. It is shown that the present approach provides a method for evaluating the positional relationship between the mandibular condyle and glenoid fossa in patients with TMD. Author.

Cranio-mandibular disorders with special reference to orthodontic treatment: an evaluation from childhood to adulthood. Egermark, I., Thilander, B. Department of Orthodontics, Faculty of Odontology, University of Goteborg, Sweden. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1992) Jan, Vol. 101 (1), pp. 28–34.

The purpose of the present study was to re-examine a group of children and adolescents with respect to signs and symptoms of cranio-mandibular disorders (CMD) and to evaluate whether any differences could be found between persons who had received orthodontic treatment earlier and those who had not. A total of 402 children in three age groups (7, 11, and 15 years) had participated in a cross-sectional study on the relationship between malocclusion and signs and symptoms of CMD. Ten years later they were asked to answer a questionnaire. In the youngest age groups (now 17 and 21 years old) 190 (76 per cent) subjects answered the questionnaire. In the oldest age group (now 25 years old) completed questionnaires were received from 103 (84 per cent) subjects, and 83 (62 per cent) of those subjects appeared for a clinical examination. Subjects with a history of orthodontic treatment had a lower prevalence of subjective symptoms of CMD (TMJ sounds included) than those without any experience of orthodontics. Although the differences were small, it was more evident for the oldest age group. The clinical examination has shown that persons who had undergone orthodontic treatment had a significantly lower clinical dysfunction index than those who had not. Author.

A comparison of clinical examination, history, and magnetic resonance imaging for identifying orthodontic patients with temporomandibular joint disorders. Hans, M. G., Lieberman, J., Goldberg, J., Rozencweig, G., Bellon, E., Department of Orthodontics, School of Dentistry, Case Western Reserve University, Cleveland, OH 44106–4905. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1992) Jan, Vol. 101 (1), pp. 54–9.

The temporomandibular joint (TMJ) status of 51 juvenile orthodontic patients was assessed with magnetic resonance imaging (MRI), clinical examination, and questionnaire data. The results of this study demonstrated that the prevalence of anterior displacement of the meniscus was 11.8 per cent (6 of 51) as assessed by MRI. Clicking or pain in the TMJ area was found in 9.8 per cent (5 of 51) of the subjects by clinical examination, and 19.8 per cent (10 of 51) of the

subjects had a history of pain or clicking of the TMJ. Three subjects had a positive MRI and a negative history and clinical examination. However, all subjects with positive MRI findings had a history of other risk factors known to be associated with TMJ internal derangement (TMJ-ID). Therefore practitioners should use a history form and a clinical examination technique that includes a broad range of signs and symptoms of temporomandibular disorders (TMD) to identify patients who may have abnormal condyle disk relationships and be at risk from TMD. Clicking and pain in the TMJ helped identify only one half of the patients with abnormal condyle disk relationships in this study population. Future cephalometric studies will monitor the effects of abnormal condyle disk relationships on facial growth during orthodontic treatment. Author.

Frequency of Epstein-Barr viral DNA in 'Western' sinonasal and Waldeyer's ring non-Hodgkin's lymphomas. Weiss, L. M., Gaffey, M. J., Chen, Y. Y., Frierson, H. F. Jr. Department of Pathology, City of Hope National Medical Center, Duarte, CA 91010. *American Journal of Surgical Pathology* (1992) Feb, Vol. 16 (2), pp. 156–62.

Sinonasal non-Hodgkin's lymphomas (SNHL) of B- or T-cell immunophenotype have been associated with the Epstein-Barr virus (EBV) in Asian patients. We investigated eight sinonasal and 10 Waldeyer's ring NHL from Western patients for evidence of EBV genomes using a sensitive in situ hybridization technique. EBV DNA was detected in each of three sinonasal NHL with a T-cell immunophenotype and two of five cases with a B-cell immunophenotype. Two of 10 B-cell Waldeyer's ring NHL were positive for EBV genomes. In each positive case, EBV genomes were evenly distributed among the neoplastic cells, whereas no evidence of EBV in associated non-neoplastic lymphocytes or epithelium was seen. The results indicate that B-cell and T-cell sinonasal NHL are associated with EBV in Western as well as in Asian patients, and the EBV may have a role in oncogenesis in NHL of the upper aerodigestive tract. The strong association of EBV with nasopharyngeal carcinoma suggests that the anatomic site is important in the development of EBV-related neoplasms. Author.

Acquired nostril stenosis. al-Qattan, M. M., Robertson, G. A. Section of Plastic Surgery, Health Sciences Centre, University of Manitoba, Winnipeg, Canada. *Annals of Plastic Surgery* (1991) Oct Vol. 27 (4), pp. 382–6.

Acquired nostril stenosis is an uncommon but challenging problem. Etiology, pathophysiology, presentation, and treatment options are presented, together with two patient reports. A classification is offered that allows for appropriate selection of the surgical procedure. Author.

Laryngotracheal resection and reconstruction for subglottic stenosis. Grillo, H. C., Mathisen, D. J., Wain, J.C. General Thoracic Surgical Unit, Massachusetts General Hospital, Boston, Massachusetts. *Annals of Thoracic & Cardiovascular Surgery* (1992) Jan Vol. 53 (1), pp. 54–63.

Eighty patients with inflammatory stenoses of the subglottic larynx and upper trachea were treated by single-stage laryngotracheal resection and reconstruction. Fifty stenoses originated from postintubation lesions (endotracheal tubes, tracheostomy, cricothyroidostomy), 7 originated from trauma, 19 were idiopathic, and 4 were miscellaneous. Repair consisted of resection of the anterolateral cricoid arch in all patients, plus resection of posterior laryngeal stenosis where present, with salvage of the posterior cricoid plate, appropriate resection and tailoring of the trachea, and primary anastomosis using a posterior membranous tracheal wall flap to resurface the bared cricoid cartilage in 31 patients. One postoperative death resulted from acute myocardial infarction. Long-term results were excellent in 18 patients, good in 48, satisfactory in 8, and failure in 2.

Three additional patients had good results at discharge but were followed up for less than 6 months. Author.

Nasopharyngeal teratomas. Tharrington, C. L., Bossen, E. H. Duke University School of Medicine, Durham, NC. *Archives of Pathology and Laboratory Medicine* (1992) Feb, Vol 116 (2), pp. 165–7.

Teratomas are the most common congenital tumours, but neoplasms of the nasopharynx are rare in neonates and children. Four histologic types of nasopharyngeal teratomas occur—dermoids, teratoids, true teratomas, and epignathi—of which dermoids comprise the vast majority. A case is presented of a neonate born at term exhibiting signs of respiratory difficulty, which were found to be caused by a true teratoma of the nasopharynx. A review of several large case series of pediatric teratomas confirmed the rarity of occurrence at this site. An extensive review of case reports identified those meeting the criteria of true teratomas of the nasopharynx—the characteristics of these cases are delineated. Author.

Longitudinal study of changes in speech perception between 70 and 81 years of age. Pedersen, K. E., Rosenhall, U., Moller, M; B. Department of Otolaryngology, University of Goteborg, Sweden. *Audiology* (1991) Vol 30 (4), pp. 201–11.

As part of a large gerontological study in Goteborg, Sweden, 376 randomly selected men and women born in 1901–1902 underwent pure-tone and speech audiometry at the age of 70 years in 1971–1972. The survivors of the 1901–1902 cohort were tested again at the ages of 75, 79 and 81 years. A second group consisting of 297 men and women born in 1906 was also tested with pure-tone and speech audiometry at the ages of 70 and 75 years. We found that the median speech discrimination scores for the 1901–1902 cohort decreased moderately with increasing age: between the ages of 70 and 81 years scores decrease 10 per cent for men and 8 per cent for women for the worse ear and 7 and 6 per cent for the better ear in this group. The median speech reception threshold increased 15 dB over the 11-year period for both men and women, an increase in good agreement with the increase in the pure-tone threshold over this period. Those born in 1906 had a slightly lower discrimination score (4 per cent) when tested at the age of 70 years compared to those born in 1901 tested at the same age. As many as half of the 81-year-old persons would have a theoretical benefit from hearing aid amplification. Author.

Delayed temporary threshold shift induced by impulse noises (weapon noises) in men. Dancer, A., Grateau, P., Cabanis, A., Vailant, T., Lafont, D. French-German Research Institute of Saint-Louis, France. *Audiology* (1991) Vol. 30 (6), pp. 345–56.

Most of the available information on the effects of impulse noise on hearing is derived from temporary threshold shift (TTS2) measurements performed 2 min after a single exposure to small-weapon noises. TTS is known to recover as a linear function of the logarithm of time when it is induced by a continuous noise of moderate intensity. Following the exposure to impulse noise, several investigators have reported individual exceptions to the log-time relation, e.g. increases in TTS during the first hour of recovery. These authors observed a 'rebound recovery function' for most of the exposed men, and they conclude that this phenomenon '... has implications for the use of TTS in the construction of damage risk criteria for hazardous noise exposure... a single measure, such as the widely used TTS2 may not be an adequate index of the magnitude of the TTS'. In order to thoroughly investigate in man the existence of 'delayed' TTS following the exposure to actual weapon noises, the 'French Committee on Weapon Noises' carried out the following study. Three groups of soldiers (28 subjects) wearing no hearing protection were exposed in the free field over 2 days to impulse noises produced by a rifle. Bekeby audiograms were obtained from each subject just before the exposure, and at 5 min, 1 h and 4 h after exposure. All audiometric tests were carried out even when no TTS was observable in the first postexposure audiogram. A significant number of subjects showed a 'delayed TTS' and/or a 'rebound recovery'. The maximum TTS was observed at 1 h after exposure, but the observation of a delayed recovery and a rebound recovery indicate that audiometric tests should be performed in all cases at least up to 4 h after the exposure. More detailed work is necessary to establish what changes may be necessary in the present damage risk criteria for impulse noises of a very high level. Author.

Visual evoked and brain stem auditory evoked potentials in divers. Todnem, K., Vaernes, R., Kambestad, B. K. Norwegian Underwater Technology Centre, Bergen. *Aviation, Space and Environmental Medicine* (1991) Oct, Vol. 62 (10), pp. 982–5.

Visual evoked potentials (VEP) were examined in 14 divers during dives to 360 metres of seawater (msw). All latencies increased significantly with depth. VEP and brain stem auditory evoked potentials (BAEP) were similarly examined in 18 divers before and after these dives. N75 was significantly increased after compared to before the dive, while there was no significant difference in the P100 and N145 latencies. BAEP I-V latency was significantly decreased after the dives. VEP and BAEP were examined in 156 divers and 99 controls. There was no significant difference in VEP. BAEP I-III interpeak latency was significantly increased for the divers, but with no significant changes in I-V and III-V latencies. VEP and BAEP were examined in 26 divers after treatment for neurological decompression sickness. There was no significant difference compared to the control group. The conclusions are that VEP and BAEP change transiently with influence of hyperbaric pressure, but do not measure major permanent disturbances in the divers' visual and auditory pathways. Author.

Immunoglobulin A against viral capsid antigen of Epstein-Barr virus and indirect mirror examination of the nasopharynx in the detection of asymptomatic nasopharyngeal carcinoma. Zong, Y. S., Sham, J. S., Ng, M. H., Ou, X. T., Guo, Y. Q., Zheng, S. A., Liang, J. S., Qiu, H. Department of Pathology and Oncology, Shantou University Medical College, People's Republic of China. *Cancer* (1992) Jan, Vol. 69 (1), pp. 3–7.

To evaluate the efficacy of population screening for early stage nasopharyngeal carcinoma (NPC) in southern China, the authors recruited 42,048 and 10,402 apparently healthy subjects residing in a high incidence and a low incidence area, respectively; all subjects were between the ages of 30 and 59 years. The subjects' serum specimens were tested for immunoglobulin (Ig) A antibody against viral capsid antigen (IgA/VCA) of Epstein-Barr virus (EBV). Of the subjects from the high incidence area, 2823 were found to be seropositive. In follow-up, they had yearly examinations of the nasopharynx by indirect mirror with or without biopsy; 41 were found to have histologically confirmed asymptomatic NPC during the first 2 years of follow-up. The tumors in most of these cases were localized and were at earlier stages than tumors of symptomatic cases of NPC seen in the same region before the screening. The yearly indirect mirror examination of the nasopharynx seems to have effectively identified most of the tumors at the stage of asymptomatic disease. The risk of harboring NPC was found to be different among the different sex and age subgroups of seropositive individuals. By limiting such screening to those who are at exceedingly high risk, the cost of the screening can be kept within the spending of the public health authority, and the effectiveness of the screening also is improved. Author.

Detection of human papillomavirus DNA in carcinomas of the nasal cavities and paranasal sinuses by polymerase chain reaction. Furuta, Y., Takasu, T., Asai, T., Shinohara, T., Sawa, H., Nagashima, K., Inuyama, Y. Department of Otolaryngology, Hokkaido University School of Medicine, Sapporo, Japan. *Cancer* (1992) Jan 15, Vol. 69 (2), pp. 353–7.

The authors retrospectively searched for human papillomavirus (HPV) types 16 and 18 in 60 cases of carcinoma arising from the nasal cavities (NC) and paranasal sinuses (PS) by using the polymerase chain reaction (PCR) on DNA extracted from formalin-fixed, paraffin-embedded tissues. In cases of SCC (n = 49), the authors also compared the clinical features of patients with HPV-positive and HPV-negative results to determine the clinical significance of HPV. HPV 16 and 18 were detected in 7 of the 49 cases (14 per cent) of SCC. In the other histologic types of carcinoma (n = 11), neither HPV 16 nor HPV 18 was detected. No significant differences in the clinical features were observed between patients with SCC with HPV-positive and HPV-negative results. The results suggest that HPV 16 and 18 are implicated in the pathogenesis of SCC arising from the NC and PS. However, the presence of HPV is not related to local progression, occurrence of metastases, or the prognosis of the patients. Author.

Clinical significance of the epidermal growth factor receptor gene in squamous cell carcinomas of the nasal cavities and paranasal sinuses. Furuta, Y., Takasu, T., Asai, T., Yoshimura, S., Tokuchi, F., Shinohara, T., Nagashima, K., Inuyama, Y. Department of Otolaryngology, Hokkaido University School of Medicine, Sapporo, Japan. *Cancer* (1992) Jan 15, Vol. 69 (2), pp. 358–62.

The authors retrospectively analysed epidermal growth factor receptor (EGFR) gene amplification in 49 cases of squamous cell car-

cinoma (SCC) arising from the nasal cavities (NC) and paranasal sinuses (PS) by using slot-blot analysis of DNA extracted from formalin-fixed paraffin-embedded tissues. Also, the relationship between the results of gene analysis and the clinical features of the patients was studied to investigate the clinical significance of the EGFR in SCC of the NC and PS. Amplification of the EGFR gene was detected in 5 of the 49 cases (10 per cent). No significant difference was observed between EGFR gene amplification and the presence of lymph node metastases, local recurrence, or prognosis. This suggests that EGFR gene amplification is not related to the local progression or metastasis of the SCC in the NC and PS. In addition, it appears that amplification of the EGFR gene is not a prognostic indicator for SCC in the NC and PS. Author.

Nasopalpebral lipoma-coboboma syndrome. Akarsu, A. N., Sayli, B. S. Department of Medical Biology and Genetics, Ankara University Medical Faculty, Sıhhiye, Turkey. *Clinical Genetics* (1991) Nov, Vol. 40 (5), pp. 342-4.

Au autosomal dominant dysplasia-malformation syndrome affecting seven individuals in one family is reported. The components of the syndrome include congenital nasopalpebral lipoma, telecanthus, and bilateral cobobomas of upper and lower lids without midface hypoplasia. It appears to be the second recorded example resulting from an autosomal dominant gene fully penetrant in both sexes. Author.

Usher syndrome: results of a screening programme in Colombia. Tamayo, M. L., Bernal, J. E., Tamayo, G. E., Frias, J. L., Alvira, G., Vergara, O., Rodriguez, V., Uribe, J. I., Silva, J. C. Unidad de Genética Clínica, Facultad de Medicina, Pontificia Universidad Javeriana, Colombia. *Clinical Genetics* (1991) Oct, Vol. 40 (4), pp. 304-11.

Otological ophthalmological and genetic studies were performed in 46 patients with Usher syndrome, identified through a screening programme in Colombia. Of them, 69.6 per cent had Usher syndrome type I, 26.1 per cent type II, and 4.3 per cent type III. Thirty-three patients showed profound deafness (71.7 per cent), while 13 (28.3 per cent) had moderate to severe hearing loss. The ophthalmologic manifestations showed marked variability. Although the majority of the patients had serious ocular impairment before age 20, 32.6 per cent had good central visual acuity. The prevalence of Usher syndrome in Colombia, estimated at 3.2/100,000 warrants the implementation of screening programmes in schools for the deaf and for the blind. Our study confirms that Usher syndrome shows no geographic or racial variation and that the disorder has a wide variability of expression and genetic heterogeneity. The large size of the families we have detected may provide important opportunities for further genetic studies, particularly in terms of the assignment of the locus and gene mapping. Author.

Effect of high-frequency hearing loss on compound action potentials recorded from the intracranial portion of the human eighth nerve. Moller, A. R., Jho, H. D. Department of Neurological Surgery, University of Pittsburgh School of Medicine, Pennsylvania. *Hearing Research* (1991) Sep, Vol. 55 (1), pp. 9-23.

Compound action potentials (CAP) were recorded from the exposed intracranial portion of the eighth nerve to stimulation with click sounds in patients with sensorineural high-frequency hearing loss who underwent microvascular decompression (MVD) operations to treat trigeminal neuralgia (TN). In patients with normal hearing the CAP recorded in that way is characterized by a negative peak, preceded by a small positivity and followed by a positivity and sometimes a second negative peak. In patients with high-frequency hearing loss the CAP also usually had an initial sharp negative peak in response to clicks of high intensity (105 to 110 dB Pe SPL), similar to findings in patients with normal hearing, but in patients with high-frequency hearing loss the initial negative peak was often followed by a slow negative deflection. The latency of the initial negative peak in the CAP in patients with high-frequency hearing loss was longer than the latency of this peak in patients with normal hearing, but the difference in latencies of this peak to condensation and rarefaction clicks was small. When the stimulus intensity was lowered the amplitude of the initial peak decreased, and the CAP became dominated by a broad negative peak with a latency of 6 to 8 ms. In 11 of 15 patients with severe high-frequency hearing loss, a series of quasi-periodic waves was superimposed on the CAP. The frequency of these waves varied between 500 and 1200 Hz, and the waves could be detected between 6 and 16 ms after presentation of the click stimulus. These waves were usually present in the response

to stimuli in the intensity range from 75 to 110 dB Pe SPL. Only 4 of 17 patients with normal hearing had similar waves. Author.

Hypoxia induced hearing loss in animal models of the fetus in-utero. Sohmer, H., Freeman, S. Department of Physiology, Hebrew University, Hadassah Medical School, Jerusalem, Israel. *Hearing Research* (1991) Sep, Vol. 55 (1), pp. 92-7.

The human fetus in-utero has low arterial oxygen tension. It has, therefore, been suggested that at greater than 28 weeks gestational age, the fetus may have a sensori-neural hearing loss comparable to that seen in adult cats exposed to similar degrees of hypoxia. This is due to hypoxia induced depression of the endocochlear potential. However, fetal blood is provided with compensatory mechanisms (elevated hematocrit and hemoglobin and special fetal hemoglobin) which enable pick up and transport of more oxygen from the placenta than adult blood under the same physiological conditions. Therefore, the hypothesis of a fetal sensori-neural hearing loss due to oxygen lack was tested in the following animal models: a) Adult cats to which feline red blood cells were infused thus causing a polycythemia similar to fetal conditions; b) Adult rats acclimated to altitude in a hypobaric chamber, inducing erythropoiesis with elevated hematocrit and hemoglobin; c) Neonatal guinea pigs and goats studied when they were less than 12 hours old so that the fetal compensatory mechanisms were still present. In each model, hypoxia (PaO₂ 20-30 mmHg) induced an ABR threshold elevation resembling that obtained in the uncompensated adult animal. Thus these experiments seem to have confirmed the hypothesis of a fetal, hypoxic induced sensori-neural hearing loss even though such experiments have not been conducted directly on fetal animals. Author.

The effects of Carbogen, carbon dioxide, and oxygen on noise-induced hearing loss. Hatch, M., Tsai, M., LaRouere, M. J., Nuttall, A. L., Miller, J. M. University of Michigan Medical School, Ann Arbor 48109-0506. *Hearing Research* (1991), Nov, Vol. 56 (1-2), pp. 265-72.

An investigation into the effect of Carbogen (95 per cent O₂/5 per cent CO₂), 5 per cent CO₂/air, and 100 per cent oxygen on cochlear threshold shifts caused by noise was undertaken. Five groups of eight pigmented guinea pigs were exposed to 105 dB broad band noise for 6 h per day for five consecutive days with each group receiving the various gaseous mixtures either during noise exposure or for 1 h immediately after noise exposure. A control group received the same noise exposure but respired air. Auditory threshold shifts, as measured by the auditory evoked brainstem response, were measured at 2, 4, 8, 12, 16, 20 and 24 kHz. Recordings were taken pre-exposure and at Day 1, 3, 5 and Weeks 2 and 3 after noise exposure. Carbogen, given during noise exposure, resulted in a trend toward less post noise exposure threshold shift (as compared to controls) which reached statistical significance by Week 3 at all frequencies except 2 and 20 kHz. Subjects given Carbogen after exposure also showed a general trend toward decreased noise induced threshold shifts, as compared to controls, but this was not statistically significant. The mixture of 5 per cent CO₂/air given during noise exposure yielded no difference in threshold shifts as compared to controls. When 100 per cent oxygen was administered during noise exposure, a marked decrease in noise induced threshold shifts could be seen as compared to controls, with differences reaching statistical significance by day 5 at most frequencies. These results indicate that oxygen (i.e. cochlear-oxygenation) is a more important factor than CO₂ (i.e., as a vasodilator) in protection of the cochlea from noise induced damage. Author.

Assessment of cisplatin-induced ototoxicity using derived-band ABRs. Coupland, S. G., Ponton, C. W., Eggermont, J. J., Bowen, T. J., Grant, R. M. Department of Pediatrics, University of Calgary, Alta, Canada. *International Journal of Pediatric Otorhinolaryngology* (1991), Oct, Vol. 22 (3), pp. 237-48.

Ototoxicity is an adverse side effect of numerous therapeutic agents (amino-glycoside antibiotics, blood chelating agents, diuretics and oncologic drugs) used in treatment of both adult and pediatric patients. Recently, there has been increasing interest in using the auditory brainstem response (ABR) to detect both short-term effects of ototoxicity in adults and long-term effects of drug administration on neonates and children. Since click ABRs have relatively poor frequency selectivity they best approximate the pure-tone hearing threshold in the 2000-4000 Hz frequency range. Hearing loss above or below that frequency range can be present without producing significant abnormalities in the ABR waveform parameters. Frequency-specific ABRs can be obtained using the derived response

technique. The purpose of this study was to investigate early cisplatin ototoxicity using both the broadband click and derived ABR and to monitor progressive hearing loss with repeated drug trials in 18 patients studied over a 2-year period. ABRs were obtained serially prior to and following intravenous administration of cisplatin. Derived ABRs were found to be more sensitive than broadband click ABR in detecting early high-frequency hearing loss. For click ABRs, the cumulative dosage of cisplatin at age of ABR examination was correlated with hearing loss in only those patients under 3 years of age. No significant correlation was found between cumulative cisplatin dosage when tested and degree of hearing loss in those patients over 3 years of age. Author.

Late results after cholesteatoma surgery in early childhood. Rigner, P., Renvall, U., Tjellstrom, A. Department of Otolaryngology, Sahlgren's Hospital, University of Gothenburg, Sweden. *International Journal of Pediatric Otorhinolaryngology* (1991) Oct, Vol. 22 (3), pp. 213–8.

The incidence of cholesteatoma in children living in an urban area of western Sweden has been studied. The total population of this area is 470,000 out of which 100,000 are children, 16 years or younger. The charts of all the children undergoing cholesteatoma surgery during the time period from 1977 to 1986 were collected and analysed. Only those patients who had not been exposed to cholesteatoma surgery before were included. In a follow-up study the clinical situation and hearing level have been evaluated 4 years or more after surgery. Nineteen patients, that is an incidence of 0.4 children out of 100,000 inhabitants each year, were found meeting these criteria with an irregular distribution over the 10 year period. During the first two years 11 cases were found, but in the following 8 years only 8 new cases were identified. Intact wall tympanoplasty was used in 10 cases and canal wall down operation in 9 cases. Residual cholesteatoma was detected in 6 cases and recurrent cholesteatoma in one case. Six of these had an intact wall tympanoplasty and all but one were later reoperated with a canal wall down approach. The study reveals a decrease in the incidence of cholesteatoma in children over a 10-year period. The more frequent use of tympanometry and otomicroscopy is a possible explanation. Author.

Posterior cricoarytenoid activity and glottic size during hyperpnea in humans. Brancatisano, A., Dodd, D. S., Engel, L. A. Thoracic Medicine Unit, Westmead Hospital, Sydney, New South Wales, Australia. *Journal of Applied Physiology* (1991) Sep, Vol. 71 (3), p. 977–82.

We measured the electromyographic activity of the posterior cricoarytenoid (PCA) muscle simultaneously with glottic width (dg) in five normal human subjects during hyperpnea induced by hypoxia (7 per cent CO₂ in N₂) or hypercapnia (9 per cent CO₂ in 50 per cent O₂). The glottic aperture was measured during inspiration at the time corresponding to peak inspiratory PCA activity and during expiration at the time corresponding to the minimum tonic activity. During hyperpnea, peak and tonic PCA activity increased simultaneously with widening of the vocal cords in both phases of the respiratory cycle. The PCA activity during both inspiration and expiration showed a single curvilinear relationship with dg of the form $dg = A = Be - k.PCA$ (where A, B, and k are constants) in three of the five subjects. At 50 per cent of its maximum PCA activity, dg already reached 95 per cent of its maximum value, which was less than that recorded during a voluntary forced expiratory manoeuvre. The single curvilinear relationship between PCA activity and dg could be due to the length-tension relationship of the PCA muscle and/or changes in its mechanical coupling, as well as simultaneous agonist and antagonist laryngeal muscle activity during progressive chemical stimulation. Also, further widening of the glottis during forced expiration suggests recruitment of additional muscles, e.g., the arytenoideus. Author.

Steady and oscillatory transnasal pressure-flow relationships in healthy adults. Sullivan, K. J., Chang, H. K. Department of Biomedical Engineering, University of Southern California, Los Angeles 90089-1451. *Journal of Applied Physiology* (1991) Sep, Vol. 71 (3), pp. 983–92.

The influence of flow characteristics and gas physical properties on nasal resistance (NR) is difficult to ascertain with traditional rhinomanometric methods because the respiratory airflows used in these methods are largely uncontrolled. As an alternative, we used a novel method of rhinomanometry in which an externally generated flow is passed through the nasal passage via a mouthpiece. The transnasal pressure-flow relationships for both quasi-steady and

oscillating flows and with different gases were obtained in five healthy adults with this method. For quasi-steady nasal flows the dimensionless pressure losses were largely independent of physical properties of the gas and a function of the Reynolds number (Re) of the flow. Values of NR for quasi-steady flows were largely independent of flow direction for Re up to roughly 3,000 in all five subjects and for Re up to roughly 19,000 in two of the five subjects. Airway collapse occurred in two subjects at Re greater than 3,000 suggesting that the nonrigid segments of the nasal passage contribute to the intersubject variations in NR at high flow rates. Pressure losses associated with oscillating flows measured at frequencies between 1 and 16 Hz were similar to steady flow losses provided that Re was less than roughly 3,000. For Re greater than 3,000 the oscillating flow resistances were affected by the phasic redistribution of flow into compliant segments of the nasal passage. These results indicate that, for flow rates and harmonic frequencies associated with breathing at rest, the nasal passage behaves as a rigid rough-walled pipe in which pressure losses are largely determined by forces relating to viscous friction and convective accelerations. Author.

The status of the resection margin as a prognostic factor in the treatment of head and neck carcinoma. Ravasz, L. A., Sloopweg, P. J., Hordijk, G. L., Smit, F., van-der-Tweel, I. Department of Radiotherapy, University Hospital, Utrecht, The Netherlands. *Journal of Craniomaxillofacial Surgery* (1991) Oct, Vol. 19 (7), pp. 314–8.

The value of the status of the resection margin as a prognostic factor after surgical treatment was investigated in 80 patients with squamous cell carcinoma of the oral cavity, oropharynx and laryngopharynx. The relation of locoregional recurrence with the presence or absence of tumour at the surgical margin was analysed together with other indications for postoperative radiotherapy. Locoregional recurrence was observed in 20 per cent and was correlated with tumour thickness over 5 mm, spidery growth and tumour-positive margins. Tumour-positive margin as a single indication for postoperative irradiation was not related to an increased recurrence rate. When however occurring together with other indications for postoperative irradiation, the recurrence rate was higher than in the patient group with the same number of indications for postoperative radiotherapy but without tumour at the surgical margins. Author.

Postoperative elevation of eyeglasses from the nasal bridge. Freitag, D. S., Bennett, R. G. University of Southern California School of Medicine, Los Angeles. *Journal of Dermatologic Surgery and Oncology* (1991) Nov, Vol. 17 (11), pp. 906–8.

After surgery on the proximal nose, wearing eyeglasses can be difficult and uncomfortable. In addition, pressure on the skin underneath the eyeglass nose pads may modify wound healing. We describe simple techniques using readily available materials and optical devices that either reduce or remove pressure on the nose from eyeglasses. Author.

The surgical management of chondrodermatitis nodularis chronica helioides. Coldiron, B. M. Department of Dermatology and Otolaryngology, University of Cincinnati Medical Center, Ohio 45267. *Journal of Dermatologic Surgery and Oncology* (1991) Nov, Vol. 17 (11), pp. 902–4.

Surgical management of chondrodermatitis nodularis chronica helioides by curettage is described. The curet directs the dissection. The necrotic cartilage is soft and is removed easily. The endpoint is reached when the curet is repelled by firm, elastic cartilage. Contours remain normal because the skin is tented over the defect supported by the remaining cartilage. Author.

Chondrodermatitis nodularis chronica helioides. Successful treatment with the carbon dioxide laser. Taylor, M. B. University of Utah Division of Dermatology, Salt Lake City. *Journal of Dermatologic Surgery and Oncology* (1991) Nov, 17 (11), pp. 862–4.

Chondrodermatitis nodularis chronica helioides is a painful, persistent, or recurrent inflammatory lesion involving the cartilage and skin of the external ear. These lesions are resistant to many therapeutic modalities and often recur even after surgical excision. The CO₂ laser was used to vaporize the cutaneous nodules and involved cartilage. The wounds were allowed to heal with only minimal care using hydrogen peroxide cleansing and applications of topical antibiotic ointment. Twelve lesions have been treated with no recurrences after 2 to 15 months. There have been no complications or infections following laser surgery. The pain from these lesions is gone immediately following laser surgery. Healing with excellent cosmetic results is complete usually within 3 to 4 weeks. Author.

Microtia and short stature: a new syndrome. Cohen, B., Temple, I. K., Symons, J. C., Hall, C. M., Shaw, D. G., Bhamra, M., Jackson, A. M., Pembrey, M. E. Department of Orthopaedics, University College Hospital, London. *Journal of Medical Genetics* (1991) Nov, Vol. 28 (11), pp. 786–90.

Bilateral microtia, absent patellae, short stature, poor weight gain, and characteristic facial features are described in two female sibs. Other skeletal anomalies included complete habitual dislocation of the elbow, slender ribs and long bones, abnormal modelling of the glenoid fossae with hooked clavicles, and clinodactyly. Bone age was significantly delayed and there was flattening of the epiphyses. This unusual combination of features has many similarities to the syndrome described by Hurst *et al.* Author.

Two sisters with mental retardation, cataract, ataxia, progressive hearing loss, and polyneuropathy. Begeer, J. H., Scholte, F. A., van-Essen, A. J. Department of Child Neurology, University Hospital, Groningen, The Netherlands. *Journal of Medical Genetics* (1991) Dec, Vol. 28 (12), pp. 884–5.

Two sisters are described with a disorder characterized by mental retardation, congenital cataract, progressive spinocerebellar ataxia, sensorineural deafness, and signs of peripheral neuropathy. Progressive hearing loss, ataxia, and polyneuropathy became evident in the third decade. The differential diagnosis of this syndrome is discussed including the syndrome described by Berman *et al.* and Koletzko *et al.* Author.

The noise hazard in a large health care facility. Yassi, A., Gaborieau, D., Gillespie, I., Elias, J. Department of Community Health Sciences and Medicine, University of Manitoba, Winnipeg, Canada. *Journal of Occupational Medicine* (1991) Oct, Vol. 33 (10), pp. 1067–70.

A noise-level survey, dosimetry, and audiometric testing were conducted in a large health care facility to determine the areas with hazardous noise levels, the number of employees at risk, and the prevalence of noise-induced hearing loss (NIHL) among the exposed. Nine high-risk areas were identified, with readings of up to 110 dBA recorded. In the work force of approximately 6,000 employees, 321 were identified as exposed to potentially hazardous noise levels. Abnormal hearing patterns were observed in 59 (19 per cent) of the 308 workers screened, with 36 cases of NIHL documented. The findings showed that noise is a serious hazard in many areas, that some cases of NIHL have developed from occupational exposure in this hospital, and that a control programme is essential. Author.

Congenital nasal stenosis in newborn infants. Leiberman, A., Carmi, R., Bar-Ziv, Y., Karplus, M. Department of Otolaryngology and Neonatology, Soroka University Medical Center, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel. *Journal of Pediatrics* (1992) Jan, Vol. 120 (1), pp. 124–7.

Five newborn infants with evidence of nasal obstruction were shown to have congenital nasal stenosis. Conservative treatment, including temporary nasopharyngeal intubation in three, eventually resulted in symptomatic relief, so that surgery could be avoided. Author.

Insensitivity of rapid antigen detection methods and single blood agar plate culture for diagnosing streptococcal pharyngitis. Wegner, D. L., Witte, D. L., Schrantz, R. D. Ottumwa Regional Health Foundation, IA 52501. *JAMA* (1992) Feb 5, Vol. 267 (5), pp. 695–7.

OBJECTIVE—To compare the sensitivity of five group A streptococcal antigen detection systems and single blood agar plate culture with a two-plate culture method for diagnosis of streptococcal pharyngitis. **DESIGN**—Two simultaneous throat swabs were obtained from consecutive patients with suspected streptococcal pharyngitis. One swab was tested for streptococcal antigen by physicians' office nurses and the other was cultured on both aerobic blood agar and anaerobic trimethoprim-sulfamethoxazole blood agar plates. **SETTING**—Community office practice and community hospital laboratory. **PARTICIPANTS**—Consecutive outpatients seen by one of four pediatricians or a family practice physician. **MAIN OUTCOME MEASURES**—Results of rapid streptococcal antigen tests were compared with culture results either on a single aerobic blood agar plate or on the two-plate culture method. **RESULTS**—On throat swabs from 755 consecutive outpatients, the two-plate culture method detected 261 cases (defined as 100 per cent) of group A streptococcal pharyngitis. The anaerobic trimethoprim-sulfamethoxazole plate alone, read at 1 and 2 days, detected 245 cases (94 per

cent). The blood agar plates used alone detected 189 cases (72 per cent) at 2 days and 151 cases (58 per cent) at 1 day. Antigen detection test results were positive for 106 throat specimens (41 per cent), with individual kit sensitivity ranging from 31 per cent to 50 per cent compared with the two-plate culture method. Antigen detection test sensitivity decreased with decreasing colony counts. Antigen kit false-positivity rates varied from 0 to 28 per cent. **CONCLUSIONS**—We conclude that the single blood agar plate culture and the antigen detection tests are insensitive, possibly leading the physician toward undertreatment and risking immunologic, local, or distant sequelae. The two-plate culture method should be the standard of practice to rule out streptococcal pharyngitis. Author.

Emergency department management of blunt cervical tracheal trauma in children. Humar, A., Pitters, C. Department of Pediatrics, Children's Hospital of Eastern Ontario, University of Ottawa, Canada. *Pediatric Emergency Care* (1991) Oct, Vol. 7 (5), pp. 291–3.

A case history of a young girl who sustained posterior laceration of her cervical trachea after blunt trauma is presented. She was brought to the emergency department (ED) by her parents roughly two hours after the incident with only minor symptoms. While in the ED, she developed significant airway compromise over a span of minutes. Orotracheal intubation was performed to secure her airway, and she responded to conservative management of her laceration. Her signs and symptoms, resolved, and she was discharged after five days. This case illustrates the importance of urgent evaluation and careful observation of patients with possible tracheal damage, as even very small tears have the potential to cause life-threatening airway compromise. Author.

Comparative efficacy of erythromycin-sulfisoxazole, cefaclor, amoxicillin or placebo for otitis media with effusion in children. Mandel, E. M., Rockette, H. E., Paradise, J. L., Bluestone, C. D., Nozza, R. J. Department of Pediatric Otolaryngology, Children's Hospital of Pittsburgh, PA 15213. *Pediatric Infectious Diseases* (1991) Dec, Vol. 10 (12), pp. 899–906.

We randomly assigned children with otitis media with effusion to receive either erythromycin-sulfisoxazole, cefaclor, amoxicillin or placebo for a 2-week period, primarily to determine whether either erythromycin-sulfisoxazole or cefaclor would have greater short term efficacy than that found previously for amoxicillin, and secondarily to supplement earlier data on outcomes in placebo-treated subjects. Interim analyses showed no statistically significant (P less than 0.05) differences between the three antimicrobial treatment groups in the primary outcome measures, i.e. the prevalence of middle-ear effusion 2 and 4 weeks after entry, and indicated that postulated differences favouring the erythromycin-sulfisoxazole and cefaclor groups over the amoxicillin group were unlikely to be found even if the originally calculated sample size were attained. Subject accrual was therefore terminated. Final analysis showed no significant between-group differences in other outcome measures as well. In antimicrobial vs. placebo comparisons neither erythromycin-sulfisoxazole nor cefaclor gave more favourable outcomes than placebo, whereas more children were effusion-free in the amoxicillin group than in the placebo group at 2 weeks (31.6 per cent vs. 14.1 per cent, $P = 0.007$), but not at 4 weeks. We conclude that when antimicrobial treatment for otitis media with effusion is deemed advisable, neither erythromycin-sulfisoxazole nor cefaclor should replace amoxicillin as first line treatment. Author.

Lesions of the foramen ovale: CT-guided fine-needle aspiration. Barakos, J. A., Dillon, W. P. Department of Neuroradiology, University of California, San Francisco Medical Center 94143. *Radiology* (1992) Feb, Vol. 182 (2), pp. 573–5.

To verify perineural spread of tumour along the mandibular division of the trigeminal nerve in four patients, the authors obtained cytologic specimens by means of a CT-guided transfacial fine-needle aspiration technique. Diagnoses were squamous cell carcinoma ($n = 3$) and meningioma ($n = 1$). The technique allows biopsy of deep lesions that would otherwise require open surgical biopsy. Author.

Prophylaxis in otolaryngologic surgery and neurosurgery: a critical review. Shapiro, M. Department of Clinical Microbiology, Hadassah University Hospital, Jerusalem, Israel. *Reviews of Infectious Diseases* (1991) Sep-Oct, Vol. 13, Suppl. 10, pp. S858–68.

In an assessment of prospective, controlled studies of antimicrobial prophylaxis against infections following otolaryngologic surgery and neurosurgery, the English-language literature on this topic was

reviewed. Rates of infection following clean otolaryngologic operations are the same for patients receiving prophylaxis and those receiving placebo. For patients with head and neck cancer, rates of postoperative infection without antibiotic prophylaxis in clean surgery are less than 1 per cent and prophylaxis is not indicated; in contrast, in clean-contaminated procedures (infection rate, 18 per cent-87 per cent), prophylaxis is highly protective, although several studies have shown no advantage to its prolongation beyond 24

hours. For the latter operations, drugs with adequate activity against oral anaerobes are essential, whereas the need for coverage against *Enterobacteriaceae* is doubtful. In clean and clean-contaminated neurosurgical procedures, the rate of protective efficacy of prophylaxis ranges between 63 per cent and 76 per cent. For shunt operations the available evidence favours prophylaxis, but the wide range of infections reported mandates a large-scale multicentre trial to decide the issue. Author.