The Journal of Laryngology & Otology
November 2001, Vol. **115,** pp. 946–950

Abstract Selection

Validity of ultrasonography in diagnosis of acute maxillary sinusitis. Puhakka, T., Heikkinen, T., Maekelae, M. J., Alanen, A., Kallio, T., Korsoff, L., Suonpaeae, J., Ruuskanen, O. Department of Pediatrics, Turku University Hospital, Turku, Finland. tuomo.puhakka@utu.fi. *Archives of Otolaryngology – Head and Neck Surgery* (2000) December, Vol. 126 (12), pp. 1482–6.
BACKGROUND: Accurate diagnosis of maxillary sinusitis is difficult on the basis of clinical examination only because the signs and symptoms of sinusitis are nonspecific. A simple, rapid, and readily available method for diagnosing maxillary sinusitis in primary care would increase the accuracy of the diagnoses and thus reduce unnecessary antibiotic treatment. OBJECTIVE: To investigate the validity of ultrasonography compared with radiography and magnetic resonance imaging (MRI) in detection of maxillary sinusitis. DESIGN: Ultrasonography and plain-film radiography of the paranasal sinuses were performed on all patients and MRI was performed on 40 randomly selected patients on day seven of the study. SETTING: Study office at the Department of Pediatrics of Turku University Hospital, Turku, Finland. PATIENTS: One hundred ninety-seven young adults who contacted the study office within 48 hours of the onset of symptoms of the common cold. MAIN OUTCOME MEASURES: Detection rates of maxillary sinusitis by ultrasonography, radiography, and MRI. RESULTS: Acute maxillary sinusitis was diagnosed in 24 per cent of the sinuses by radiography and in 28 per cent by MRI. Compared with MRI findings, the sensitivity of ultrasonography for detection of maxillary sinusitis was 64 per cent (specificity, 95 per cent). Using a two-step diagnostic approach in which radiological findings were additionally considered in cases of negative ultrasound findings, a sensitivity of 86 per cent (specificity, 95 per cent) was observed. CONCLUSIONS: The high specificity of ultrasonography indicates that a positive ultrasound finding can be regarded as evidence of maxillary sinusitis. The addition of plain-film radiography in cases of negative ultrasound findings increases the diagnostic sensitivity to clinically acceptable levels without the loss in specificity. Active use of ultrasonography would substantially decrease the need for radiological imaging of the sinuses and also help reduce unnecessary antibiotic treatment in primary care.

Prevention of postoperative nausea and vomiting with antiemetics in patients undergoing middle ear surgery: comparison of a small dose of propofol with droperidol or metoclopramide. Fujii, Y., Tanaka, H., Kobayashi, N. Department of Anesthesiology, Toride Kyodo General Hospital, Toride City, Japan. *Archives of Otolaryngology – Head and Neck Surgery* (2001) January, Vol. 127 (1), pp. 25–8.
OBJECTIVE: To compare the efficacy and safety of a small dose of propofol with other commonly used antiemetics, droperidol and metoclopramide, for the prevention of postoperative nausea and vomiting in patients undergoing middle ear surgery. DESIGN: Prospective, randomized, double-blind study. SETTING: University-affiliated teaching hospital. PATIENTS: Ninety patients (48 females, 42 males) scheduled for middle ear surgery. INTERVENTION: Patients received propofol, 0.5 mg/kd, droperidol, 20 microg/kg, or metoclopramide hydrochloride, 0.2 mg/kg, intravenously at the end of the surgical procedure. A standardized general anesthetic technique was employed throughout the surgical procedure. MAIN OUTCOME MEASURE: Emetic episodes and safety assessment were performed during two periods – zero to three hours in the postanesthetic care unit and three to 24 hours in the ward-after receiving anesthesia. RESULTS: The incidence of patients who were emesis free during the zero to three-hour period after receiving anesthesia was 93 per cent for those who received propofol, 73 per cent for those who received droperidol, and 70 per cent for those who received metoclopramide, respectively; the respective corresponding incidence during the three- to 24-hour period after receiving anesthesia was 90 per cent, 67 per cent, and 60 per cent (P).05, overall Fisher exact probability test). No clinically adverse events were observed in any of the groups. CONCLUSION: A small dose of propofol is a better antiemetic than droperidol or metoclopramide for the prevention of postoperative nausea and vomiting after middle ear surgery.

Causes of tonsillar disease and frequency of tonsillectomy operations. Mattila, P. S., Tahkokallio, O., Tarkkanen, J., Pitkaeniemi, J., Karvonen, M., Tuomilehto, J. Department of Otorhinolaryngology, Helsinki University Central Hospital, Haartmaninkatu 4 E, FIN-00290 Helsinki, Finland. petri.mattila@huch.fi. *Archives of Otolaryngology – Head and Neck Surgery* (2001) January, Vol. 127 (1), pp. 37–44.
OBJECTIVE: To characterize the factors that influence the frequency of tonsillectomy and adenoidectomy operations. DESIGN AND SETTING: Nationwide questionnaire. Analysis of patients undergoing tonsillectomy or adenoidectomy at Helsinki University Central Hospital, Helsinki, Finland. PARTICIPANTS: Four hundred eighty-three of 819 individuals randomly selected from the Finnish National Public Registry. Two thousand two hundred thirty-one individuals younger than 30 years who underwent tonsillectomy (888 patients), adenotonsillectomy (294 patients), or adenoidectomy (1049 patients) at Helsinki University Central Hospital from January 1, 1997, through December 31, 1998. MAIN OUTCOME MEASURES: Age of the individuals at the time of operation. Indication for the operation. RESULTS: The frequency of adenoidectomies was 24 per cent (116 persons) and that of tonsillectomies eight per cent (39 persons) among the 483 individuals who returned the questionnaire. The frequency of tonsillectomy operations by age was multimodal; the frequency of tonsillectomies increased in preschool-aged children, declined thereafter, and increased again in teenagers. Tonsillar hyperplasia was the most frequent among children younger than 10 years, peritonsillar abscesses among teenagers, and chronic tonsillitis among individuals older than 20 years. The proportion of females was higher than males among teenaged patients. However, the cause and sex distribution could not explain the multimodality in the age-specific frequency. The age-specific frequency of tonsillectomies performed because of peritonsillary abscesses still followed a multimodal distribution. CONCLUSIONS: Factors relating to respiratory tract infections, maturation of the immune system, and the onset of puberty contribute to the cause of tonsillar disease. Distinct indications for tonsillectomy should be defined for preschool-age children, teenagers, and individuals older than 20 years.

Word recognition by children listening to speech processed into a small number of channels: data from normal-hearing children and children with cochlear implants. Dorman, M. F., Loizou, P. C., Kemp, L. L., Kirk, K. I. Department of Speech and Hearing Science, Arizona State University, Tempe 85287-0102, USA. *Ear and Hearing* (2000) December, Vol. 21 (6), pp. 590–6.
OBJECTIVE: The aims of this study were 1) to determine the number of channels of stimulation needed by normal-hearing adults and children to achieve a high level of word recognition and 2) to compare the performance of normal-hearing children and adults listening to speech processed into six to 20 channels of stimulation with the performance of children who use the Nucleus 22 cochlear implant. DESIGN: In Experiment 1, the words from the Multisyllabic Lexical Neighborhood Test (MLNT) were processed into six to 20 channels and output as the sum of sine waves at the center frequency of the analysis bands. The signals were presented to normal-hearing adults and children for identification. In Experiment 2, the wideband recordings of the MLNT words were presented to early-implanted and late-implanted children who used the Nucleus 22 cochlear implant.

RESULTS: Experiment 1: Normal-hearing children needed more channels of stimulation than adults to recognize words. Ten channels allowed 99 per cent correct word recognition for adults; 12 channels allowed 92 per cent correct word recognition for children. Experiment 2: The average level of intelligibility for both early- and late-implanted children was equivalent to that found for normal-hearing adults listening to four to six channels of stimulation. The best intelligibility for implanted children was equivalent to that found for normal-hearing adults listening to six channels of stimulation. The distribution of scores for early- and late-implanted children differed. Nineteen percent of the late-implanted children achieved scores below that allowed by a six-channel processor. None of the early-implanted children fell into this category. CONCLUSIONS: The average implanted child must deal with a signal that is significantly degraded. This is likely to prolong the period of language acquisition. The period could be significantly shortened if implants were able to deliver at least eight functional channels of stimulation. Twelve functional channels of stimulation would provide signals near the intelligibility of wideband signals in quiet.

Comparison of hearing aids over the 20th century. Bentler, R. A., Duve, M. R. Department of Speech Pathology and Audiology, The University of Iowa, Iowa City, USA. *Ear and Hearing* (2000) December, Vol. 21 (6), pp. 625–39.
OBJECTIVE: To measure hearing aid performance using circuitry representative of the major eras of technological advancement during the 20th century. DESIGN: Twenty subjects with audiometric profiles consistent with hearing aid candidacy were fit with each of seven hearing aids. No directional microphones were used and binaural benefit was not assessed. Each hearing aid was fit to the strategy or fitting scheme of the era, or that which was intended by the presenting manufacturer. Electroacoustic and/or real ear measures of gain, output, bandwidth, and distortion were obtained. Objective outcome measures assessing speech perception in backgrounds of noise were obtained. Subjective outcome measures of sound quality and ease of listening were obtained in the laboratory and in real life settings. RESULTS: Electroacoustic and real ear measures indicate that gain and bandwidth have increased, and output and distortion have decreased with current electronic aids. Speech perception ability across the different outcome measures showed significantly poorer performance with the body and linear hearing aids when input levels were high; when input levels were low, outcome measures with hearing aids using a dynamic range compression were not negatively affected. At the most adverse signal to noise ratios, none of the hearing aids was shown to be superior. Measured bandwidth did not correlate highly with speech perception ability for any of the objective outcome measures used. For the subjective measures of sound quality done in a blinded manner, no significant differences were found across different listening situations for current hearing aids. CONCLUSIONS: The two most important factors for aided speech perception appear to be the audibility and distortion of the signal. No current compression scheme proved superior with the outcome measures used in this investigation.

Otoacoustic emissions and tympanometry in children with otitis media. Koivunen, P., Uhari, M., Laitakari, K., Alho, O. P., Luotonen, J. Department of Otolaryngology, University of Oulu, Finland. *Ear and Hearing* (2000) June, Vol. 21(3), pp. 212–7.
OBJECTIVE: To examine otoacoustic emission and tympanometric findings in children with surgically confirmed middle ear effusion (MEE). DESIGN: A total of 102 children aged 0.7 to 11.4 years undergoing surgery because of otitis media were included in the study. A tympanometric examination and transient evoked otoacoustic emission (TEOAE) measurement were performed on each ear before myringotomy. MEE was aspirated, weighed and classified as mucoid or nonmycoid. TEOAE measurements were compared with the quantity and quality of the MEE and to the tympanometric findings. RESULTS: Fifty (72 per cent) ears out of the 65 ears containing effusion showed reduced TEOAE. The quantity of effusion was associated significantly (p 0.001) with the TEOAE responses, and mucoid effusion reduced the emissions more than nonmucoid. The sensitivity of tympanometry in identifying the ears without recordable TEOAE WAS 73 per cent and the specificity 81 per cent. CONCLUSION: MEE results in a significant reduction in TEOAEs even when the effusion is nonmucoid. This suggests that transmission of acoustic energy to and from the middle ear is altered in children experiencing any form of otitis media with effusion.

The prognostic value of promontory electric auditory brain stem response in pediatric cochlear implantation. Nikolopoulos, T. P., Mason, S. M., Gibbin, K. P., O'Donoghue, G. M. Department of Otolaryngology, University Hospital, Queen's Medical Center NHS Trust, Nottingham, United Kingdom. *Ear and Hearing* (2000) June, Vol. 21 (3), pp. 236–41.
OBJECTIVE: To test the hypothesis that children with clear promontory electrically evoked auditory brain stem responses (prom-EABRs) would outperform, after cochlear implantation, children who had no prom-EABR preoperatively. DESIGN: A prospective study was undertaken on 47 implanted children assigning them to two groups (group A: 35 children with a clear wave e-V in the preoperative prom-EABR and group B: 12 children with no prom-EABR). Speech perception and speech intelligibility were assessed annually up to three years after implantation with the IOWA sentence test (level A and level B), Connected Discourse Tracking, Categories of Auditory Performance, and Speech Intelligibility Rating. t-test and Mann-Whitney U test were used to compare the above outcome measures in the two groups. RESULTS: There was no statistically significant difference between the two groups on any of the outcome measures at any interval. Moreover, the small differences observed showed no consistent trend toward either group of children. Further analysis revealed that the outcomes have not been affected by possible confounding factors (age at implantation, duration of deafness, preoperative unaided pure-tone thresholds, and number of inserted electrodes). CONCLUSIONS: The results suggest that children with no prom-EABR performed at levels comparable with children who had clear promontory responses preoperatively. The prognostic value of prom-EABR is limited and absence of a prom-EABR is not, by itself, a contraindication for cochlear implantation. However, in selected cases (congenital malformations, cochlear nerve dysplasia or suspected aplasia, narrow internal auditory canal, etc.) the presence of a prom-EABR is a positive finding in the assessment of candidates for cochlear implantation as it confirms the existence of intact auditroy neurones.

Auditory brain stem response in small acoustic neuromas. El-Kashlan, H. K., Eisenmann, D., Kileny, P. R. Department of Otolaryngology – Head and Neck Surgery, University of Michigan, Ann Arbor, USA. *Ear and Hearing* (2000) June, Vol. 21 (3), pp. 257–62.
OBJECTIVE: The auditory brain stem response (ABR) has been criticized recently as an insensitive measure for the detection of small acoustic neuroma (AN). This study was undertaken to evaluate our experience with the efficacy of ABR in detection of small tumors. STUDY DESIGN: Retrospective case review. Twenty-five patients with surgically proven small ANs measuring 1 cm or less were reviewed. In addition, 568 patients who underwent screening ABR were reviewed to evaluate the rate of false positive results at our institution. RESULTS: ABR was abnormal in 92 per cent of patients with small AN in this series. Screening ABR was abnormal in approximately 19 per cent of cases, one-third of which were found to have AN on magnetic resonance imaging testing. CONCLUSION: With strict adherence to optimal technique and evaluation criteria, the ABR remains a viable option for AN screening, especially in elderly patients or when there is a low index of suspicion.

Botulinum toxin in otolaryngology: a review of its actions and opportunities for use. Neuenschwander, M. C., Pribitkin, E. A., Stataloff, R. T. Department of Otolaryngology – Head and Neck Surgery, Thomas Jefferson University, USA. *Ear Nose & Throat Journal* (2000) October, Vol. 79 (10), pp. 788–9, 792, 794 passim.
Botulinum toxin has several important properties that make it an ideal chemical denervator. These include its high degree of specificity for the neuromuscular junction, its ability to induce temporary and reversible denervation, and its limited degree of side effects and complications. Botulinum toxin is being used safely in a wide variety of clinical settings by many different specialists. In otolaryngologic practice, it is being administered for the treatment of at least a dozen conditions, including various dysphonias, dystonias, and spasms as well as torticollis, facial nerve

paralysis, and hyperkinetic facial lines. Studies ahve shown that botulinum toxin injections have a high rate of success in temporarily relieving symptoms.

Case report: acute management of external laryngeal trauma. Ikram, M., Naviwala, S. Department of Otolaryngology – Head and Neck Surgery, Aga Khan University Hospital, Karachi, Pakistan. mubasher.ikram@aku.edu. *Ear, Nose and Throat Journal* (2000) October, Vol. 79 (10), pp. 802–4.
External laryngeal trauma is rare, accounting for less than one per cent of all trauma cases seen at major centers. We report the case of a man who experienced multiple injuries, including an external laryngeal trauma. The primary signs and symptoms of his laryngeal trauma were hoarseness, hemopytsis, the loss of his laryngeal prominence (Adam's apple), neck tenderness, traumatic emphysema in the neck, and a small penetrating wound to the right of the laryngeal prominence. The patient underwent immediate tracheostomy and surgical exploration. On long-term follow up, his voice quality and airway patency improved. This case illustrates the importance of rapid identification and early management of laryngotracheal trauma in a patient with multiple injuries.

Clinical experiences with acute mastoiditis – 1988 through 1998. Lee, E. S., Chae, S. W., Lim, H. H., Hwang, S. J., Suh, H. K. Department of Otolaryngology – Head and Neck Surgery, College of Medicine, Korea University, Seoul. *Ear, Nose & Throat Journal* (2000) November, Vol. 79 (11), pp. 884–8, 890–2.
The incidence of acute mastoiditis has declined dramatically during the postantibiotic era. Even so, antibiotic-resistant or unusual pathogens can still cause this disease entity. At our hospital, we documented an increase in antibiotic-resistant and atypical pathogens such as Actinomyces spp. and Mycobacterium tuberculosis. In this paper, we discuss the optimal diagnosis and treatment strategy for acute mastoiditis, and we describe our restrospective review of 13 patients with mastoiditis who were treated at our hospital from 1988 through 1998. Eight of these patients recovered following treatment with intravenous antibiotics, with or without myringotomy, and five who had complications of disease were managed surgically. Among these five, one developed chronic otitis media and one developed cholesteatoma three years later. For patients with acute mastoiditis, we emphasize the need to be aware of any unusual pathogens that do not respond to empiric antibiotic therapy.

Percutanous radiological gastrostomy in patients with head and neck cancer. Deurloo, E. E., Schultze-Kool, L. J., Kroeger, R., van Coevorden, F., Balm, A. J. Department of Radiology, Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands. *European Journal of Surgical Oncology* (2001) February, Vol. 27 (1), pp. 94–7.
AIM: To evaluate the results of percutaneous radiological gastrostomy in patients with head and neck cancer. PATIENTS AND METHODS: This was a retrospective study design. One hundred and eighteen patients with head and neck cancer were referred 130 times for gastrostomy tube placement between 1 April 1993 and 17 August 1998. Mean age was 60 years. All data were analysed by using the following parameters: success rate, complications and mortality. Complications were divided into major, minor (complication that needed only conservative treatment) and tube-related. RESULTS: The success rate of percutaneous radiological gastrostomy was 97 per cent. Major complications occurred in six per cent of patients after gastrostomy tube placement. Minor complications occurred in 15 per cent of patients. There was one tube-related complication. Procedure-related mortality occurred in one patient. The results of this study show no difference from those known from the literature for the percutaneous method and confirm that radiological gastrostomy has significantly lower rates of major complications than other methods of gastrostomy placement. CONCLUSION: Percutaneous radiological gastrostomy tube placement is, in our opinion, an effective and reliable method for placing a feeding tube in patients with head and neck cancer.

Coping with head and neck cancer during different phases of treatment. Sherman, A. C., Simonton, S., Adams, D. C., Vural, E., Hanna, E. Behavioural Medicine, Arkansas Cancer Research Center, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 756, Little Rock, Arkansas, USA. ShermanAllen@exchange.UAMS.edu. *Head and Neck* (2000) December, Vol. 22 (8), pp. 787–94.
BACKGROUND: Little is known about how patients cope with head and neck cancer despite its devastating impact on basic functioning. This study examined coping patterns among patients at different phases of illness. METHODS: Participants were 120 patients with advanced disease, who were grouped according to the following phases of illness: (1) pretreatment, (2) on treatment, (3) six months after treatment, and (4) >six months after treatment. Coping was assessed with the COPE questionnaire, and outcome measures assessed general distress (Profile of Mood States) and illness-specific distress (Impact of Events Scale). RESULTS: Use of specific coping responses differed among the groups. Denial (p0.05), behavioural disengagement (i.e., giving up or withdrawing, p0.05), suppression of competing activities (i.e., focusing exclusively on the illness, p 0.01), and emotional ventilation (p 0.10) were most characteristic of patients who were receiving or had recently completed treatment. There were no differences in flexibility of coping or overall effort expended, but patient who were on treatment or had who recently completed treatment used the greatest number of strategies, Generally, denial, behavioural disengagement, and emotional ventilation were associated with greater distress. CONCLUSIONS: Results suggest that phase of illness may be important in shaping patients' responses to life-threatening illness.

The optimum method for reconstruction of complex lateral oromandibular-cutaneous defects. Deschler, D. G., Hayden, R. E. Department of Otolaryngology – Head and Neck Surgery, Massachusetts Eye and Ear Infirmary, 243 Charles Street, Boston, Massachusetts 02114, USA. *Head and Neck* (2000) October, Vol. 22 (7), pp. 674–9.
BACKGROUND: Ablation of large intraoral cancers can create extensive through-and-through defects of the lateral face, resulting in loss of external facial skin, the lateral and anterior mandible, and the lateral mouth. Repair requires reconstruction of the lips, mandible, and full-thickness cheek defects. Ideal reconstruction with vascularized composite free flaps requires adequate bone and sufficiently large, yet versatile, skin flaps capable of resurfacing extensive intraoral and external defects. METHODS: A series of 12 patients with large lateral facial-mandibular defects is reviewed. All patients were treated for squamous cell carcinoma except for one patient with osteoblastic sarcoma of the mandible. All patients underwent primary reconstruction with various free flap techniques, including six scapular free flaps, two iliac crest free flaps, three free fibula flaps, and one radial forearm flap. Attainment of reconstructive goals, free flap survival, and complication rates were assessed. RESULTS: All defects were successfully reconstructed in the primary setting. No flap failures occurred. One venous occlusion was successfully salvaged. No orocutaneous fistulas or postoperative hematomas were noted. CONCLUSION: The reconstructive options for extensive defects of the lateral face and jaw are reviewed with attention to the complex three-dimensional soft tissue requirements. The superiority of the scapular composite flap is emphasized because paddles of optimal thickness in addition to adequate bone stock.

The nasogastric tube syndrome: two case reports and review of the literature. Apostolakis, L. W., Funk, G. F., Urdaneta, L. F., McCulloch, T. M., Jeyapalan, M. M. Department of Otolaryngology – Head and Neck Surgery, The University of Iowa Hospitals and Clinics, Iowa City 50242, USA. *Head and Neck* (2001) January, Vol. 23 (1), pp. 59–63.
BACKGROUND: The nasogastric tube syndrome is a potentially life-threatening complication of an indwelling nasogastric (NG) tube. The syndrome is through to result from ulceration and infection of the posterior cricoid region with subsequent dysfunction of vocal cord abduction. This dysfunction may present as complete loss of vocal cord abduction manifested as serious airway compromise. Reports of this syndrome are infrequent, with only 29 cases published to date. METHODS: Two additional cases of nasogastric tube syndrome diagnosed at the University of Iowa Hospitals and Clinics over a two-year period are presented. A search of MEDLINE (1966 through February 1999), including review of those articles' references identified seven previous publications, including 29 case reports. These 29 cases are reviewed and the findings summarized. RESULTS: Twenty-nine

cases of NG tube syndrome are identified, with 16 of these occurring in the preantibiotic period. Including the two cases presented here, 15 contemporary patients are examined. Among these 15 cases, 10 required tracheostomy, on average 8.5 days after NG tube placement. CONCLUSION: Although the fully manifested syndrome presents quite dramatically, we suspect that a clinical spectrum of severity exists with less severe cases going unrecognized. Consistent with previous reports, we found that direct visualization of the postcricoid region is required to rule out the diagnosis and recommend such action be taken whenever the diagnosis is suspected. Treatment should include establishment of a safe airway, removal of the tube whenever possible, antibiotic therapy, and antireflex therapy.

Acoustic responses of the human middle ear. Voss, S. E., Rosowski, J. J., Merchant, S. N., Peake, W. T. Eaton-Peabody Laboratory of Auditory Physiology, Massachusetts Eye and Ear Infirmary, Boston, MA 02114, USA. sev@epl.meei.harvard.edu. *Hearing Research* (2000), December, Vol. 150 (1–2). pp. 43–69.
Measurements on human cadaver ears are reported that describe sound transmission through the middle ear. Four response variables were measured with acoustic stimulation at the tympanic membrane: stapes velocity, middle-ear cavity sound pressure, acoustic impedance at the tympanic membrane and acoustic impedance of the middle-ear cavity. Measurements of stapes velocity at different locations on the stapes suggest that stapes motion is predominantly 'piston-like', for frequencies up to at least 2000 Hz. The measurements are generally consistent with constraints of existing models. The measurements are used (1) to show how the cavity pressure and the impedance at the tympanic membrane are related, (2) to develop a measurement-based middle-ear cavity model, which shows that the middle-ear cavity has only small effects on the motion of the tympanic membrane and stapes in the normal ear, although it may play a more prominent role in pathological ears, and (3) to show that that inter-ear variations in the impedance at the tympanic membrane and the stapes velocity are not well correlated.

Velopharyngeal insufficiency and articulation impairment in velo-cardio-facial syndrome: the influence of adenoids on phonemic development. Havkin, N., Tatum, S. A., Shprintzen, R. J. Communication Disorder Unit, Center for the Diagnosis, Treatment and Study of Velo-Cardio-Facial Syndrome, Department of Otolaryngology and Communication Science, Upstate Medical University, Syracuse,NY 13210, USA. havkinn@upstate.edu. *International Journal of Pediatric Otorhinolaryngology* (2000) August 31, Vol. 54 (2–3), pp. 103–10.
Velo-cardio-facial syndrome is the most common contiguous gene disorder in humans and constitutes eight per cent of patients with clefts of the secondary palate. Speech disorders, including severe hypernasality and articulation impairment have been documented as among the most common clinical manifestations of the disorder. A series of 36 consecutive patients with VCFS ranging in age from three to 14 years, all confirmed to have a 22q11.2 deletion, were studied to determine specific risk factors associated with VPI and articulation impairment. Factors studied included palatal clefting, hypotonia, platybasia, and adenoid size. The factor that correlated most strongly with speech disorders was adenoid hypoplasia or absence, a common manifestation in the syndrome. It is hypothesized that early identification of the absence or hypoplasia of the adenoids can result in the implementation of appropriate therapy plans to avoid severe disorders of speech intelligibility.

Cricotracheal resection as a primary procedure for laryngotracheal stenosis in children. Hartley, B. E., Rutter, M. J., Cotton, R. T. Department of Pediatric Otolaryngology, The Childrens Hospital Medical Center, 3333 Burnet Ave, Cincinnati, OH 45229, USA. benhartley@msn.com. *International Journal of Pediatric Otorhinolaryngology* (2000) August 31, Vol. 54 (2–3), pp.133–6.
OBJECTIVE: Cricotracheal resection (CTR) is being increasingly used in the treatment of children with severe laryngotracheal stenosis. In this institution the majority of children are treated with CTR as a salvage procedure having undergone previous unsuccessful laryngotracheal reconstruction (LTR). Selected children have undergone CTR as a primary procedure (without previous LTR). The undergoing cricotracheal resection as a primary procedure for severe laryngotracheal stenosis. METHOD: analysis from prospectively collected database. RESULTS: Seventeen patients underwent CTR without previous LTR or anterior cricoid split between October 1994 and September 1998. All the patients had grade 3 or 4 stenosis. After a minimum of one year follow up 15 children are decannulated. Five children required further surgery to achieve this. Two children still have tracheostomies. Both had extended procedures. One included bilateral arytenoid abduction for bilateral vocal cord paralysis in a patient with quadraparesis following transverse myelitis. The other child, who suffered from multiple congenital anomalies, underwent a concurrent posterior cricoid cartilage graft. Nine patients had good voice post-operatively, five had acceptable voice and three had weak or no voice. CONCLUSION: The early experience for CTR in children as a primary procedure achieved an overall decannulation rate of 88 per cent after one year follow up in children with severe laryngotracheal stenosis. Five children required further surgery to achieve this. The voice outcome was variable. CTR is an alternative primary procedure to LTR for severe laryngotracheal stenosis in children. The relative indications for these procedures are discussed.

Rate of persistent perforation after elective tympanostomy tube removal in pediatric patients. Lentsch, E. J., Goudy, S., Ganzel, T. M., Goldman, J. L., Nissen, A. J. Department of Surgery, Division of Otolaryngology, University of Louisville School of Medicine, 40292, Louisville, KY, USA. *International Journal of Pediatric Otorhinolaryngology* (2000) August 31, Vol. 54 (2–3), pp. 143–8.
This study was performed to determine the rate of persistent perforations according to age, tube type and duration of intubation inchildren who underwent elective tympanostomy tube removal. Our retrospective analysis of hospital and clinic charts included all patients who underwent elective tube removal from July 1995 to December 1997 at our institution. Information from the chart review included patient age at time of tube removal, type of tube removed, duration of intubation, presence of granulation tissue/polyps, and concomitant paper patch placement. The outcome of each surgical removal was determined by examining follow-up clinic charts. A patient was deemed to have a persistent perforation if the eardrum had not adequately healed within three months after surgery. Data on 201 patients were gathered. These patients had 273 tube removals. Eleven percent of ears (29/273) had persistent perforations. According to tube type, no perforations (0/48) occurred with Collar Bobbin tubes, six per cent (3/50) with Tytan tubes, seven per cent (3/44) with Duravent tubes, and 22 per cent (16/74) with Paparella II tubes. Three per cent (3/101) of tubes in place for three years and 15 per cent (26/172) of tubes in place for >three years showed persistent perforations after removal. Ears with granulation polyps had a nine per cent (18/203) rate of perforations, whereas those without granulation polyps had a 16 per cent (11/70) rate of perforations. Forty per cent (4/10) of ears were treated with paper patches at the time of tube removal showed persistent perforations. Our data indicate that the rate of persistent perforation (11 per cent) after elective tympanostomy tube removal is high. The factors associated with higher rates of persistent perforation (p 0.05) include duration of intubation >three years prior to removal and the use of long-term Paparella II tubes.

Topical use of mitomycin C in laser myringotomy: an experimental study in rats. Yucel, O. T. ENT Department, Medical Faculty, Hacettepe University, Ankara, Turkey. tyucel@tr-net.net.tr. *International Journal of Pediatric Otorhinolaryngology* (2000) August 31, Vol. 31, Vol. 54 (2–3), pp. 93–6.
OBJECTIVE: Ventilation tubes are used to a large extent for the treatment of otitis media with effusion. As this has some drawbacks, laser myringotomy was suggested as a treatment alternative. The use of laser has some advantages but its use is limited in prolonging the patency rate of myringotomy. Mitomycin C (MMC) is being used in some surgical applications to reduce stenosis as it has the property to inhibite activity of fibroblasts. We explored the use of mitomycin C as an adjunct in prolonging the patency rate in laser myringotomy on rats. METHODS: We performed laser myringotomy on both ears of 20 rats. We, then applied MMC with a concentration of 2 mg/ml on 10 rats to one of their ears (Group 1). In group 2 we used MMC with a concentration of 1 mg/ml. After a follow-up of eight weeks we calculated the patency rate for the two groups and the total ears with MMC and without MMC. RESULTS: The mean patency rate

observed for group 1 was found to be six weeks whereas for group 2, it was 5.8 weeks. The overall patency rate for the ears with and without MMC is 5.9 and 1.5 weeks, respectively. Whlie there was a statistical difference between ears with and without MMC (p 0.01), there was no difference between the two groups according to concentrations. CONCLUSION: Mitomycin C has an adjunct effect in laser myringotomy in prolonging the patency rate of myringotomy on rats. Low concentrations of mitomycin C have the same effect in this issue.

The relationship between otitis media with effusion and contact with other children in a British cohort studied from eight months to 3½ years. The ALSPAC Study Team. Avon Longitudinal Study of Pregnancy and Childhood. Dewey, C., Midgeley, E., Maw, R. Unit of Paediatric and Perinatal Epidemiology, University of Bristol, Bristol, UK. cdewey@AMGEN.COM. *International Journal of Pediatric Otorhinolaryngology* (2000) September 15, Vol. 55 (1), pp. 33–45.

OBJECTIVE: It is generally acknowledged that otitis media with effusion is more prevalent among children attending grouped day care. This study aimed to refine this by determining the relationships with the numbers of children at the place of day care, the age of the child and the number of siblings he/she had. METHODS: ALSPAC (the Avon Longitudinal Study of Pregnancy and Childhood) is a population based longitudinal study starting early in pregnancy and following the children throughout their lives. Nested within this study, a randomly selected group of 1590 children, the Children in Focus, were invited to attend a clinic for hands on examinations. Tympanometry was carried out at ages eight, 12, 18, 25, 31, 37 and 43 months of age. Bilateral otitis media with effusion (OME) was identified if both ears showed a flat trace. Multi-level modelling with logistic regression adjusted for a number of social and environmental influences. RESULTS: Of the 1590 children invited to the eight-month clinic, 300 (19 per cent) were excluded from the analysis because of failure to attend or because of missing data. The analyses were based on 1290 children. The prevalence of bilateral OME decreased with age, from 24.6 per cent at eight months to 11.9 per cent at 43 months. Children with older siblings and those attending day care with four or more other children were at an increased risk of OME. The adjusted odds ratios (AOR) were 1.52 (95 per cent confidence interval (CI) = 1.23, 1.88) and 1.36 (95 per cent CI = 1.02, 1.82), respectively. The risk associated with older siblings declined with age and by three years these children were no longer more likely to have OME than children with no older siblings. No such interaction with age was found for children in group day care and these children continued to be at an increased risk over the entire age period of the study. There was no increased risk associated with day care when no other children attended (AOR = 1.18, 95 per cent CI = 0.88, 1.58) or when one to three others were present (AOR = 1.10, 95 per cent CI = 0.85, 1.42). Although there was no relationship with the number of hours spent in day care, children who had started attending group care with four or more other children before nine months of age did have an increased risk compared with children starting later AOR = 1.88, 95 per cent CI = 1.12, 3.14. CONCLUSIONS: These results provide evidence that early contact with other children increases the risk of OME and that children attending day care with four or more other children remain at an increased risk of OME at least until 3½ years.

Hearing impairment prevention in developing countries: making things happen. Olusanya, B. O. Institute of Child Health and Primary Care, College of Medicine, University of Lagos, P. O. Box 75130, Lagos, Nigeria. phonics@compuserve.com. *International Journal of Pediatric Otorhinolaryngology* (2000) October 16, Vol. 55 (3), pp. 167–71.

It is estimated that at least two thirds of the world's population of persons with disabling hearing impairment reside in developing countries. Yet, little and slow progress have been reported in these countries towards tackling this problem principally on account of inadequate resources. The prospects for improvement remain uncertain. This paper re-examines the peculiar nature of hearing impairment prevention within the context of the existing health-care needs of most of these nations. It establishes that the failure to recognize the dynamics of the social change that underlie an effective national programme on hearing impairment prevention may, in itself, forestall a successful and sustainable outcome even when more resources become available.

The hearing profile of Nigerian school children. Olusanya, B. O., Okolo, A. A., Ijaduola, G. T. Institute of Child Health and Primary Care, College of Medicine, University of Lagos, P. O. Box 75130, Lagos, Nigeria. phonics@compuserve.co. *International Journal of Pediatric Otorhinolaryngology* (2000) October 16, Vol. 55 (3), pp. 173–9.

The paucity of up-to-date and representative epidemiological data on hearing disorders in Nigeria has been observed as undermining the effective advocacy of prevention initiatives. This study attempts to address this problem by evaluating the prevalence and pattern of hearing impairment in school entrants. Parental interviews, otoscopy, pure-tone audiometric screening (frequency 0.5–4 kHz) and tympanometric examinations were conducted for a representative sample of 359 school children in an inner city area of Lagos. The prevalence of hearing loss was 13.9 per cent. Middle ear abnormalities were noted in 20.9 per cent of the study population, of which 18.7 per cent were reported with otitis media with effusion. Impacted cerumen, documented in 189 children (52.6 per cent), was the most common disorder. It showed significant association with hearing loss (p 0.001) and school performance (p 0.01). Tympanic membrane abnormalities were observed in 144 (40.1 per cent) children. Of these, 45 (31.3 per cent) showed abnormal tympanograms while 28 (19.4 per cent) reported hearing loss (p 0.05). The early detection and management of hearing problems is relative rare, thus precluding the determination of possible aetoilogical factors for the observed abnormalities. Poor public awareness, dearth of relevant facilities and the lack of early screening programmes are major known contributory factors. The well established national immunisation programme offers a cost-effective platform within the primary health-care system for addressing the high prevalence of hearing abnormalities in school children.