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Abstract Selection

Auditory screening in neonates by means of transient evoked otoacoustic emissions: a report of 2 842 recordings. Aidan, D., Avan, P., Bonfils, P. Auditory Research Laboratory (CNRS, UMR Neurobiologie des Systemes Sensorimoteurs and Formation Associee Claude Bernard), Universite Rene Descartes, Faculte Necker-Enfants Malades, Hopital Boucicaut, Paris, France. *Annals of Otology, Rhinology and Laryngology* (1999) June, Vol. 108 (6), pp. 525–31.
The principal goal of an early identification program is to identify hearing impairment present at birth, in order to effect appropriate intervention as early as possible. Although recent research provides some evidence for the value of transient evoked otoacoustic emissions (TEOAEs) in neonate hearing screening, data are needed from large-scale clinical evaluations about the value of using TEOAEs for screening not only high-risk but also healthy neonates. A cohort of 1 421 neonates (2 842 ears) from the well-baby nursery was screened with TEOAEs in a 2-stage process. Neonates were referred from the first test prior to being discharged from the hospital. Those who failed were rescreened before the end of the first month. Those who did not pass the second-stage TEOAE screening were referred for diagnostic audiological evaluation for confirmation of hearing loss. Neonates transferred to a neonatal intensive care unit were not included in this study. Two neonates with bilateral sensorineural hearing loss of >40 dB hearing level were identified from this cohort. This study demonstrates the feasibility and the limitations of using TEOAEs as a universal hearing screening tool for all neonates. It confirms that the prevalence of hearing impairment in neonates has to be taken into account, even in a group of children without high-risk criteria. In France, a prevalence of 1.4 per 1,000 would represent 1,000 deaf children born every year, with reference to about 700,000 births per year. This study suggests that such universal screening programs would substantially increase the rate of early-identified infants with significant hearing impairment.

Electron microscopic temporal bone histopathology in experimental pneumococcal meningitis. Rappaport, J. M., Bhatt, S. M., Kimura, R. S., Lauretano, A. M., Levine, R. A. Department of Otolaryngology, Massachusetts Eye and Ear Infirmary, Harvard Medical School, Boston, USA. *Annals of Otology, Rhinology and Laryngology* (1999) June, Vol. 108 (6), pp. 537–47.
Bacterial meningitis is one of the most common causes of acquired profound sensorineural deafness in children. Measurement of hearing and examination of the cochlea is limited in patients suffering from acute meningitis. A rabbit model of pneumococcal meningitis was developed to identify the temporal bone histopathologic changes that occur in meningogenic labyrinthitis caused by Streptococcus pneumoniae. Light microscopy was previously performed on temporal bones from acutely meningitic rabbits with profound hearing loss as determined electrophysiologically. Extensive inflammation of the cochlea with endolymphatic hydrops was observed. The organ of Corti, however, showed preserved architecture in the majority of these animals. In order to further investigate these findings, a protocol was used to create meningitic rabbits with hearing loss ranging from early high-frequency loss to profound deafness. The temporal bones from seven rabbits were examined by transmission electron microscopy. In cases of mild hearing loss, partial degeneration of the inner row of outer hair cells, as well as edema of efferent cochlear nerve endings and marginal cells of the stria vascularis, was seen. With increasing degrees of hearing loss, the remainder of the organ of Corti and intermediate cells of the stria showed ultrastructural abnormalities. Spiral ganglion cells and basal cells of the stria vascularis remained intact in all subjects. This study provides unique information regarding the histology and pathophysiology of meningogenic deafness. The clinical implications of these findings are discussed, with an emphasis on potentially reversible changes and therapeutic intervention.

Congenital nasal hemangiopericytoma: intrauterine, intraoperative, and histologic findings. Gotte, K., Hormann, K., Schmoll, J., Hiltmann, W. D. Department of Otolaryngology – Head and Neck Surgery, University Hospital Mannheim, Germany. *Annals of Otology, Rhinology and Laryngology* (1999) June, Vol. 108 (6), p. 589–93.
Hemangiopericytoma is a rare tumor of mesenchymal origin. To date, 91 cases of nasal or paranasal hemangiopericytoma and 59 congenital hemangiopericytoma have been reported in the literature. A congenital hemangiopericytoma arising from the nasal cavity and skull base has not yet been described. We report a case of a male newborn with a highly vascular nasal tumor diagnosed by in utero sonography with three-dimensional suface reconstruction. The tumor extended to the right anterior skull base, the right nasal cavity, and the right side of the nasal pyramid. A complete resection by neodymium: yttrium-aluminum-garnet-potassium titanyl phosphate ("Nd: YAG-KTP") laser was performed on the day of cesarean section at 33 weeks' gestation. The tumor was diagnosed as hemangiopericytoma by histologic and immunohistochemical findings. Post–operative nasal flow, feeding, and sight were unimpaired. At the nine-month follow-up, the infant remained free of disease.

Ototoxicity associated with vinblastine. Moss, P. E., Hickman, S., Harrison, B. R. St. Louis College of Pharmacy, MO, USA. *Annals of Pharmacotherapy* (1999) April, Vol. 33 (4), p. 423–5.
OBJECTIVE: To describe a patient with ototoxicity associated with vinblastine chemotherapy. CASE SUMMARY: A 29-year-old white man with recurrent Hodgkin's disease received doxorubicin, bleomycin, vinblastine, and dacarbazine (ABVD) chemotherapy once every two weeks for 12 cycles. He reported tinnitus after each treatment, with an onset of about six hours and a duration of seven to 10 days. This interfered with reading, watching television, and general concentration. Symptoms returned to baseline prior to the beginning of each subsequent cycle. Audiograms performed before and after several cycles showed mild sensorineural hearing loss in the high-decibel range, but no loss of speech recognition. DISCUSSION: No reported cases of ototoxicity or tinnitus from ABVD were found. All concomitant medications were eliminated as possible causes either due to lack of temporal association with the symptoms or no reports of ototoxicity in the literature. Vincristine, a more commonly used vinca alkaloid very similar to vinblastine, was noted to have caused several cases of sensorineural hearing loss. CONCLUSIONS: This case suggests that vinblastine may cause ototoxicity.

Cholesteatomas associated with ventilation tube insertion. Golz, A., Goldenberg, D., Netzer, A., Westerman, L. M., Westerman, S. T., Gradis, M., Joachims, H. Z. Department of Otolaryngology – Head and Neck Surgery, Rambam Medical Center, Haifa, Israel. golz@netvision.net.il. *Archives of Otolaryngology – Head and Neck Surgery* (1999) July, Vol. 125 (7), p. 754–7.
To determine the incidence of cholesteatoma formation associated with ventilation tube (VT) placement and to identify and analyse the variables and risk factors that may predict or predispose to this complication. DESIGN: We reviewed the medical records of 2 829 children following VT insertion between the years 1978 and 1997 to obtain 1- to 20-year follow-up data. SETTING: Departments of Otolaryngology – Head and Neck Surgery and outpatient clinics of two tertiary referral academic medical centers. PATIENTS: A study population of 2 829 children, ranging in age from 1.2 to 14 years (5 575 ears), underwent a total of 6 710 VT placements. MAIN OUTCOME MEASURE: Cholesteatomas were considered a complication of VT placement whenever they developed at or near the site of the tube insertion. RESULTS: Cholesteatomas directly attributed to VT placement occurred in 1.1 per cent of the ears that were operated on. A higher incidence occurred (1) in childen younger than five years, (2) when Goode T-tubes were

used, (3) in cases with repeated insertions of tubes, (4) with intubation exceeding 12 months, and (5) in cases with frequent post-operative otorrhea. CONCLUSIONS: Choslesteatoma formation associated with VT placement occurs in 1.1 per cent of the ears that are operated on, and therefore it should be discussed with patients or parents prior to surgery. Periodic and long-term follow-up microscopic examinations of the eardrum should be performed in all patients following tubal extrusion or removal, especially in those at high risk for developing a secondary cholesteatoma, to detect this complication as early as possible.

Relationship of passive cigarette smoking to otitis media. Ilicali, O. C., Kelecs, N., Deger, K., Savacs, I. Department of Otorhinolaryngology, Istanbul Faculty of Medicine, Turkey. ocenker@hotmail.com *Archives of Otolaryngology – Head and Neck Surgery* (1999) July, Vol. 125 (7), p. 758–62.
OBJECTIVE: To determine the effect of passive smoking on otitis media with effusion (OME) and recurrent otitis media (ROM). DESIGN: A case-control study of children who received ventilation tubes and who were followed up for one year to determine the risk of developing postoperative otorrhea and early extrusion in relation to exposure to passive cigarette smoke. SETTING: Otorhinolaryngology Clinic of Istanbul School of Medicine, Istanbul, Turkey. PATIENTS: A total of 166 children three to seven years old who required tympanostomy tubes because of OME and ROM (case group) compared with an age-matched control group of 166 children. The control group consisted of children who did not meet and never had met criteria for insertion of tympanostomy tubes. MAIN OUTCOME MEASURES: Statistical analysis of factors associated with a higher prevalence of OME or ROM, postoperative otorrhea, and early tube extrusion. RESULTS: Passive smoking was a significant risk factor for OME and ROM. The case group was exposed to a mean of 19.6 cigarettes per day vs 14.4 cigarettes per day for the control group ($p<.004$). Only maternal smoking was a significant factor ($p<.001$); no association was found with paternal smoking. Prospective follow-up of the case group showed no significant difference in the clinical course of OME and ROM between maternally exposed and non-maternally exposed chidren. CONCLUSIONS: Passive smoking increases the risk of OME and ROM in children between three and seven years old. The avoidance of daily exposure to domestic tobacco smoke could have a public health impact.

Complications of the translabyrinthine approach for the removal of acoustic neuromas. Mass, S. C., Wiet, R. J., Dinces, E. Department of Otolaryngology – Head and Neck Surgery, McGaw Medical Center, Northwestern University, Chicago, Ill, USA. *Archives of Otolaryngology – Head and Neck Surgery* (1999) July, Vol. 125 (7), p. 801–4.
OBJECTIVE: To report the complications that occurred during a large series of surgical procedures for the removal of acoustic neuromas using the translabyrinthine approach. DESIGN: Retrospective analysis. SETTING: Neuro-otology practice with academic affiliation. Procedures were performed at either a university medical center or a community hospital in conjunction with a neurosurgery team. PATIENTS: A total of 258 patients (142 men, 116 women; mean age, 51 years) underwent the translabyrinthine approach during a 14-year period. All patients had a histologically proven diagnosis of acoustic neuroma. RESULTS: There were no deaths. There were three cases (1.1 per cent) of neurovascular compromise. There were 20 cases (7.8 per cent) of cerebrospinal fluid leak, 16 (80 per cent) of which presented as rhinorrhea and four (20 per cent) as incisional leaks. The leaks at the incision responded to conservative management, while rhinorrhea usually required more aggressive means of closure. Four patients (1.6 per cent) were diagnosed as having bacterial meningitis. Complete gross tumour removal was not achieved in four patients (1.6 per cent). Facial nerve function, as measured by the House-Brackmann system, was recorded in all patients at one year: 76 per cent had a score of I or II; 18 per cent, a score of III or IV; and 6 per cent, a score of V or VI. Other complications included three cases of pneumonia, 1 case of severe gastic hemorrhage, and one case of wound infection. CONCLUSIONS: The results of this series generally agree with those of other large series and demonstrate the safety and effectiveness of the translabyrinthine approach in excising acoustic neuromas.

CT findings in involvement of the paranasal sinuses by lepromatous leprosy. Srinivasan, S., Nehru, V. I., Bapuraj, J. R., Sharma, V. K., Mann, S. B. Department of Otolaryngology, Postgraduate Institute of Medical Education and Research, Chandigarh, India. *British Journal of Radiology* (1999) March, Vol. 72 (855), p. 271–3.
The role of nasal infection in the transmission of leprosy has been extensively studied. Leprosy can affect the paranasal sinuses due to mucosal continuity and bacillaemia. This prospective study was performed on 25 untreated patients with lepromatous leprosy. 5 mm contiguous axial and coronal CT sections of paranasal sinuses, on soft tissue and bone windows, were obtained in all patients. Each sinus was examined for mucosal thickening, soft tissue densities and bony outlines. Representative biopsies were taken from ethmoid sinus to confirm the radiological diagnosis in 12 patients with multiple paranasal sinus involvement. Ethmoid aircells were involved in 20 patients (80 per cent). Maxillary, frontal and sphenoid sinuses showed abnormalities in 12, four and three patients, respectively. The ethmoid biopsy showed involvement by lepromatous leprosy in seven of 12 patients (58.3 per cent). Involvement of paranasal sinuses is common in lepromatous leprosy and is of considerable epidemiological significance.

Acoustic neuroma surgery in geriatric patients. Pulec, J. L. Pulec Ear Clinic, University of Southern California School of Medicine, Los Angeles, USA. *Ear, Nose, and Throat Journal* (1999) June, Vol. 78 (6), p. 429–30, 433–6, 438–40 passim.
Patients older than 65 years who develop acoustic neuromas have the same signs and symptoms as younger patients. Age limits beyond which surgery for acoustic neuroma is currently not recommeded are unreasonable. Untreated vertigo in older patients frequently results in falls that can cause fracture of the femur and signficant morbidity and mortality. Surgical removal of acoustic neuromas in patients older than 65 produces results that are as good as those seen in younger patients. The patient's general medical condition, life expectancy, and factors other than chronological age should be considered when surgery is being contemplated. Acoustic neuroma surgery for the older patient can provide gratifying results and should not be withheld strictly on the basis of age.

Primary placement of a voice prosthesis on transposed colon after total pharyngoesophagectomy Parise, O. Jr., Cutait, R., Correa, P. A., Miguel, R. E., de-Angelis, E. C., Jorge, S. C. Oncology Center, Sirio-Libanes Hospital, Sao Paulo, SP, Brazil. *Head and Neck* (1999) July, Vol. 21 (4), p. 363–5.
BACKGROUND: Primary placement of a voice prosthesis may aid rehabilitation after total laryngectomy. METHODS: We present a rare clinical situation of a T4 NO MO squamous cell carcinoma of the hypopharynx and esophagus in a patient who had previously undergone a transmesocolic Billroth II gastrectomy. RESULTS: The patient benefited from a total pharyngolaryngoesophagectomy with reconstruction using a transverse-descending colon transposition, and primary placement of a low-pressure voice prosthesis. CONCLUSION: Primary placement of a voice prosthesis may be successful even in a patient who requires extensive pharyngoesophageal reconstruction using transposed colon. To our knowledge, there has been no previous report of primary placement of a voice prosthesis on a colon autograft.

Consequences of voice impairment in daily life for patients following radiotherapy for early glottic cancer: voice quality, vocal function, and vocal performance. Verdonck de Leeuw, I. M., Keus, R. B., Hilgers, F. J., Koopmans van Beinum, F. J., Greven, A. J., de Jong, J. M., Vreeburg, G., Bartelink, H. Institute of Phonetic Sciences/IFOTT, University of Amsterdam, The Netherlands *International Journal of Radiation Oncology, Biology, Physcis* (1999) July 15, Vol. 44 (5), p. 1071–8.
PURPOSE: To assess consequences of voice impairment in daily life for patients following radiotherapy for early glottic cancer, by means of a multidimensional analysis protocol including voice quality, vocal function, and vocal performance measures. METHODS AND MATERIALS: A total of 60 men treated with radiotherapy (66 Gy/33 fractions, 60 Gy/30 fractions, 60 Gy/25 fractions) for early T1 glottic cancer and 20 matched control speakers filled in questionnaires on vocal performance. Furthermore, perceptual analyses of voice quality and stroboscopic measures of vocal function were performed. There was a

longitudinal group of 10 patients from whom data were collected before, as well as six months and two years after, radiation. Furthermore, data were collected on 5 separate groups of 10 patients each: before, six months after, two years after, three to seven years after, and seven–10 years after radiation. RESULTS: High correlations were found between self-ratings of vocal performance and several voice measures. Patients before radiotherapy experienced poor voice characteristics that improved six months to 10 years after treatment, and became comparable to vocal performance of control speakers in 50 per cent of the patients Following radiotherapy, deviant voice characteristics and consequences in daily life occurred significantly more often for patients in whom initial diagnosis consisted of stripping the vocal cord instead of biopsies and for patients who continued smoking after treatment. CONCLUSION: Voice characteristics of patients diagnosed with early glottic cancer improved after radiotherapy, and became normal in half of our patients Stripping the vocal cord for initial diagnosis and continued smoking after treatment decreased deviant voice characteristics.

Impact of clinical practice guidelines on clinicians' behaviour: tonsillectomy in children. Donaldson, L. J., Hayes, J. H., Barton, A. G., Howel, D., Hawthorne, M. Department of Applied Epidemiology and Public Health, University of Newcastle upon Tyne, United Kingdom. *Journal of Otolaryngology* (1999) February, Vol. 28 (1), p. 24–30.
OBJECTIVE: This study was conducted to assess the extent to which developing and implementing clinical practice guidelines for listing children for tonsillectomy (with or without adenoidectomy) influenced the behaviour of participating ENT surgeons. METHOD: A before and after study in which the intervention (the development and dissemination of local practice guidelines) was introduced sequentially into different hospitals and surgical practice. The study was conducted in four ear, nose, and throat surgical services in the North of England, with 16 consultant ENT surgeons and their junior staff on 1 190 children aged 0 to 14 years who were judged, prior to consultation with an ENT surgeon, to have been referred for throat-related problems for which tonsillectomy was one possible treatment option were included in the study. Decisions reached by surgeons and proportion of decisions that complied with new guidelines RESULTS: Of the clinical decisions to list children for tonsillectomy taken before introduction of locally agreed guidelines, 73 per cent (486/660) conformed to the criteria in the subsequent guidelines, 15 per cent (97/660) did not, and in 12 per cent (77/660), it was impossible to judge. After the intervention, the corresponding figures were 73 per cent (386/530), 14 per cent (73/53), and 13 per cent (71/530), respectively. When decisions were taken to break the guidelines, this was more often to list for tonsillectomy when it was not indicated – 83 per cent (141/170) – than to withhold tonsillectomy when it was indicated – 17 per cent (29/170). The aspects of guidelines that were breached in decisions to carry out tonsillectomy were: the age of the child was younger than the guidelines recommended – 54 per cent (75/141); there had been fewer attacks of tonsillitis than the guidelines recommended – 22 per cent (32/141); and there were "significant" symptoms not included in the guidelines – 20 per cent (29/141). CONCLUSIONS: In spite of strong evidence to the contrary, local guidelines were formulated at a level that the majority of surgeons already attained. Guideline development and implementation, therefore, had very little impact on clinical practice. The process of local formulation of guidelines was not sufficient to achieve change toward evidence-based practice; clinical preference proved to be quite intractable. There is a need to enhance the ability of clinicians in the assessment and interpretation of research evidence. Previous work has emphasized the need to explore factors that influence clinical behaviour toward evidence-based practice. Our study suggests the need for more research into why clinicians continue to follow clinical preference even when invited to base agreed local clinical policies on evidence.

Spontaneous cerebrospinal fluid otorrhea from a tegmen defect: transmastoid repair with minicraniotomy. Kuhweide, R., Casselman, J. W. Department of Otorhinolaryngology – Head and Neck Surgery, AZ Sint Jan Hospital, Bruges, Belgium. *Annals of Otology, Rhinology and Laryngology* (1999) July, Vol. 108 (7 Pt 1), p. 653–8.
Spontaneous cerebrospinal fluid (CSF) otorrhea is a rare condition that presents in two clinical categories. In congenital labyrinthine malformations, it leads to bouts of meningitis in a hearing-impaired child. In the adult age group, a spontaneous CSF leak almost always results from a dural and bony defect in the tegmen area. Possible pathogenic mechanisms include progressive sagging and rupture of dura through a congenital tegmen dehiscence and progressive bone erosion by aberrant arachnoid granulations. These patients usually present with a middle ear effusion, resulting in clear discharge after myringotomy with tube insertion. Based on four patients with a CSF leak from a tegmen defect, this report reviews the clinical findings and diagnostic approach. The surgical management by a five-layer closure using a transmastoid approach with minicraniotomy is outlined. This procedure offers a relatively simple and reliable method for repair without the inherent risks of a middle fossa craniotomy.

Intracochlear schwannoma and cochlear implantation. Kronenberg, J., Horowitz, Z., Hildesheimer, M. Department of Otolaryngology – Head and Neck Surgery, Sheba Medical Center, Tel Hashomer, Israel. *Annals of Otology, Rhinology and Laryngology* (1999) July, Vol. 108 (7 Pt 1), p. 659–60.
A case of intracochlear schwannoma in a 58-year-old candidate for cochlear implantation is described. The tumour was located in the basal turn of the cochlea and was discovered only during surgery. Computed tomography and magnetic resonance imaging obtained prior to surgery failed to defect the tumour. Intralabyrinthine schwannomas are rare tumours that grow either in the vestibule, as intravestibular schwannas, or in the cochlea, as intracochlear schwannomas. Complete removal of this tumour was achieved through a posterior tympanotomy approach. Cochlear implantation, which resulted in good hearing, was successfully performed three years later.

Comparison of nerve banking techniques in delayed laryngeal reinnervation. Peterson, K. L., Andrews, R. J., Sercarz, J. A., Kevorkian, K., Ye, M., Blackwell, K. E., Berke, G. S. Division of Head and Neck Surgery, University of California, Los Angeles School of Medicine, USA. *Annals of Otology, Rhinology and Laryngology* (1999) July, Vol. 108 (7 Pt 1), p. 689–94.
Successful laryngeal transplantation will require adequate reinnervation of the larynx to allow phonation, coordinated swallowing, and respiration. A delay between laryngectomy and transplantation would be necessary in oncology patients because of the need for immunosuppression. In these patients, reinnervation of the donor organ would require "banking" and recovery of dormant recipient recurrent laryngeal nerves (RLNs). This pilot study was undertaken to compare the effectiveness of RLN storage using one of two techniques: 1) inserting the nerve into a muscle pocket or 2) anastomosing the proximal RLN stump to the ansa cervicalis. Six months following nerve transection and "banking," the proximal anterior branch of the RLN was reanastomosed to the distal anterior segment and the posterior branch was anastomosed directly to the posterior cricoarytenoid muscle. Tensionometry, image analysis, and electromyographic data were collected one year later. Results show reinnervation of adductors and abductors with both techniques. Banking of the RLN branches during total laryngectomy is effective and should permit delayed physiological reinnervation following laryngeal transplantation.