

## Abstract Selection

**Effects of platelet-derived growth factor – AA on the healing process of tympanic membrane perforation.** Yeo, S. W., Kim, S. W., Suh, B. D., Ch, S. H. Department of Otolaryngology – Head and Neck Surgery, The Catholic University of Korea, College of Medicine, Seoul, Korea. *American Journal of Otolaryngology* (2000) May–June, Vol. 21 (3), pp. 153–60.

**PURPOSE:** Platelet-derived growth factor basic 30 kD disulfide-bonded dimer of A and B chains (PDGF-AA, PDGF AB, PDGF-BB) and a cytokine, promoting wound healing by its mitogenicity for fibroblast an by stimulating the production of fibronectin and hyaluronic acid. This article investigates the effect of PDGF on the healing process of tympanic membrane (TM) perforation. **MATERIALS AND METHODS:** The pars tensa of the posterior aspect of the TM of rats was excised and treated with 2 microg of PDGF-AA or placebo. The animals were killed at three, five, seven, nine, 11, 15 and 28 days after operation. The healing process of TM perforation was observed with a telescope and light microscope. The temporal bones were also immunohistochemically examined for PDGF-alpha receptor (PDGF-R(alpha)) and fibronectin. **RESULTS:** All PDGF-AA-treated TM were completely closed by five days after surgery, whereas some of the placebo-treated TM were not closed at 15 postoperative days. PDGF-AA induced the most prominent proliferation of the connective tissue by nine postoperative days, after which the growth of the connective tissue decreased. By the fourth postoperative week, the PDGF-treated TM were slightly thicker than normal TM. An intense expression of fibronectin was detected in the connective tissue layer of the TM that were treated with PDGF-AA. PDGF-R(alpha) was expressed in the epithelial layer of both the PDGF-treated and control TM. **CONCLUSION:** These results show that PDGF-AA speeds up the healing process of TM defect, improves the rate of healing, and prevents atrophic changes in the healed TM by promoting the connective tissue growth. The use of PDGF-AA can be an effective alternative to surgery for managing TM perforations.

**Radiation therapy in inverted papillomas of the nasal cavity and paranasal sinuses.** Gomez, J. A., Mendenhall, W. M., Tannehill, S. P., Stringer, S. P., Cassisi, N. J. Department of Radiation Oncology, University of Florida College of Medicine, Gainesville, USA. *American Journal of Otolaryngology* May–June, Vol. 21 (3), pp. 174–8.

**PURPOSE:** Between December 1969 and September 1989, a total of 10 patients with advanced and/or recurrent inverted or cylindrical cell papillomas were treated with irradiation at the University of Florida in Gainesville. **MATERIALS AND METHODS:** Nine of 10 patients had one or more recurrences before they received radiation therapy. Three patients were treated with irradiation alone, and seven patients received surgery and irradiation (preoperatively in one patient and postoperatively in six patients). Eight patients had inverted papillomas (three with concomitant squamous cell carcinoma), and two patients had cylindrical cell papillomas. **RESULTS:** Local recurrence developed in four patients at 1.5, 6.5, 12, and 13 years after treatment. No evidence of recurrence was observed in six patients at 7, 8.5, 8.5, 9, 9 and 20.5 years after treatment. Four patients died of intercurrent disease. No patient developed a malignant transformation. Significant complications of treatment included, in one patient, an area of bone exposure in the orbit that necessitated debridement. **CONCLUSION:** Surgery is considered in patients with incompletely resectable lesions, multiple recurrent tumours, and tumours associated with malignancy

**Computerized tomographic alignment of silastic implant in type I thyroplasty.** Safak, M. A., Gocmen, H., Korkmaz, H., Kilicc, R. Ear Nose Throat Clinic, Ministry of Health Ankara Hospital Turkey. *American Journal of Otolaryngology* (2000) May–June, Vol. 21 (3), pp. 179–83.

**PURPOSE:** We designed a computerized tomography (CT)-based silastic implant preparation method that enabled custom fit to the individual size of the patient's larynx for medialization laryngoplasty. **MATERIALS AND METHODS:** Three women with unilateral vocal cord paralysis underwent type I thyroplasty operation. The individual size of the patient's larynx was determined by preoperative measurements on CT scan and the implant was prepared accordingly. The implant was then inserted through a rectangular window at the level of vocal cords which had been outlined according to CT findings. **RESULTS:** Three patients, who were aged 41, 25, and 37 years, underwent medialization laryngoplasty by this technique. They were followed up for 37, 16 and four months, respectively. There was not any rejection reaction, and satisfactory functional results with 10, seven and nine seconds of phonation duration have been achieved, respectively. **CONCLUSION:** In this technique, the desired medialization of the paralyzed vocal cord was accomplished by the first insertion of the implant. Thus, the duration of the operation and the vocal cord edema aroused by manipulation of the inner perichondrium and internal laryngeal structures were reduced.

**Myxomas of the head and neck.** Andrews, T., Kountakis, S. E., Maillard, A. A. Department of Otolaryngology – Head and Neck Survey, University of Virginia Medical School, Charlottesville 22908, USA. *American Journal of Otolaryngology* (2000) May–June, Vol. 21 (3), pp. 184–9.

**PURPOSE:** Myxomas are rare, locally infiltrative, benign, connective tissue tumours that are found in bone and somatic soft tissues. This article reports our experience with head and neck myxomas and provides a comprehensive literature review. **MATERIALS AND METHODS:** Retrospective record review of head and neck myxoma cases seen at two tertiary referral centers in Houston, Texas, from 1970 to 1994. Comprehensive literature review and compilation of all myxomas reported in the head and neck. **RESULTS:** We identified seven cases of true head and neck myxoma treated in our centers and identified 169 cases reported in the literature. Most often, myxomas originated in bone (mandible or maxilla) and were most commonly found in adults. All tumours except one were treated surgically. Recurrence rates were six per cent for local or wide excision and 28 per cent for more conservative surgery such as enucleation or curettage. **CONCLUSIONS:** Myxomas of the head and neck should be treated with complete excision of the tumour with clear margins.

**The use of unilateral deep plane neck lifting to improve the aesthetic appearance of the neck dissection deformity.** Ducic, Y., Hilger, P. A. Department of Otolaryngology at the University of Texas SouthWestern Medical Center in Dallas, USA. *American Journal of Otolaryngology* (2000) May–June, Vol. 21 (3), pp. 202–6.

The primary concerns of the head and neck cancer surgeons are, and should remain, the complete extirpation of tumour and the prevention of tumour recurrence. In recent years, numerous advances have been made in the reconstruction of this patient population, significantly improving their functional and aesthetic outcomes. In this article, with an illustrative case example, we present our technique of unilateral deep plane neck lift that may be considered when one is attempting to achieve better symmetry in patients after radical neck dissection.

**Sensorineal hearing loss and Mondini dysplasia caused by a deletion at locus DFN3.** Arellano, B., Ramirez-Camacho, R., Garcia-Berrocal, J. R., Villamar, M., Del-Castillo, I., Moreno, F. Servicio de ORL, Clinica Puerta de Hierro, C/San Martin de Porres, 4, 28035 Madrid, Spain. barellanor@seorl.org. *Archives of Otolaryngology–Head and Neck Surgery* (2000) September, Vol. 126 (9), pp. 1065–9.

**OBJECTIVE:** To study a family with inner ear malformations, and sensorineural hearing loss. **DESIGN:** Clinical, radiological, and genetic study of the members of a family with different degrees of sensorineural hearing loss. **RESULTS:** The males in the family manifested profound congenital hearing loss with severe inner ear malformations, while the only affected female had progressive hearing loss that had begun during puberty. Computed tomography showed inner ear malformations in both males, with enlarged internal auditory meatus and Mondini dysplasia. Genetic analysis X. **CONCLUSION:** A familial Mondini dysplasia is associated to a microdeletion at the deafness locus DFN3.

**Ultrasonography guided fine-needle aspiration for the assessment of cervical metastases.** Knappe, M., Louw, M., Gregor, R. T. Department of Otolaryngology/Head and Neck Surgery, University of Stellenbosch Medical School, PO Box 19063, Tygerberg 7505, South Africa. *Archives of Otolaryngology – Head and Neck Surgery* (2000) September, Vol. 126 (9), pp. 1091–6.

**OBJECTIVE:** To assess the value of ultrasonography (US) combined with fine-needle aspiration (FNA) cytology for the investigation of lymph node metastases in patients with head and neck cancer. **DESIGN:** Comparison of clinical examination (palpation) and preoperative US-FNA examination results of cervical nodes in a samples of patients with head and neck cancer. The histological features of the neck dissection specimens are used to validate these two variables. **SETTING:** A head and neck oncology service in a tertiary referral hospital. **PATIENTS:** A consecutive sample of 56 patients with head and neck squamous cell carcinoma, first seen between April 1 1996, and July 30, 1998, who had neck dissections performed after the US-FNA examination. **INTERVENTION:** Cervical US-FNA pre-operatively, followed by elective or therapeutic radical modified or selective neck dissection. **MAIN OUTCOME MEASURES:** The histological examination results of subsequent neck dissection specimens are used to determine the sensitivity, specificity, and accuracy of US-FNA for individual nodes. Second, the results of node staging by clinical examination and US-FNA examination are compared. **RESULTS:** The sensitivity was 89.2 per cent; specificity 98.1 per cent; and accuracy, 94.5 per cent. Correct node stages were obtained in 52 (93 per cent) of the patients using US-FNA compared with 34 (61 per cent) using palpation. **CONCLUSIONS:** Ultrasonography combined with FNA is a highly accurate technique for the investigation of cervical lymph node metastases. A more accurate diagnosis may result in more appropriate treatment, particularly in a setting with limited resources. Retropharyngeal nodes, micrometastases, and lymph nodes smaller than 4 mm are limitations of US-FNA. Ultrasonography combined with FNA is a useful technique for the staging of head and neck cancer.

**Viral RNA in middle ear mucosa and exudates in patients with chronic otitis media with effusion.** Moyses, E., Lyon, M., Cordier, G., Mornex, J. F., Collet, L., Froehlich, P. Departement d'ORL et de Chirurgie Cervico-Faciale, Hôpital E. Herriot, 69003 Lyon, France. *Archives of Otolaryngology – Head and Neck Surgery* (2000) September, Vol. 126 (9), pp. 1105–10.

**OBJECTIVE:** To evaluate viral and cytokine signalling correlates of the persistent inflammation associated with chronic otitis media with effusion (OME). **DESIGN:** Prospective study. **METHOD:** Reverse transcriptase-polymerase chain reaction targeting RNA viruses frequently associated with OME (respiratory syncytial virus and parainfluenza virus type 3, the proinflammatory cytokines interleukin 8 and interleukin 1beta, and RANTES (regulated upon activation, normal T cell expressed and secreted) was performed on mucosal biopsy samples and on samples of the liquid and cellular compartments of inflammatory exudates obtained from 26 children (49 ears) with infected middle ears. Ribonucleic acid extracted from rapidly frozen samples was reverse transcribed by Moloney murine leukemia virus reverse transcriptase and amplified for 35 cycles using previously validated primers. Amplicons were evaluated by molecular size after agarose gel electrophoresis with ethidium bromide. **RESULTS:** Most children had evidence of the presence of an RNA virus in at least one specimen. Respiratory syncytial virus was present in 40 per cent and parainfluenza virus type 3 in eight per cent of effusions. Interleukin 8 messenger RNA was present in 21 per cent of inflammatory exudates but never in cells from the mucosal biopsy samples. **CONCLUSIONS:** Our data support a viral

contribution to the cause of OME and suggest that the inflammatory cytokines observed derive more from cells in the inflammatory exudate than from those in the middle ear mucosa.

**Randomized controlled trial of homoeopathy versus placebo in perennial allergic rhinitis with overview of four trial series.** Taylor, M. A., Reilly, D., Llewellyn-Jones, R. H., McSharry, C., Aitchison, T. C. University Department of Medicine, Glasgow Royal Infirmary, Glasgow G31 2ER. *British Medical Journal* (2000) August 19–26, Vol. 321 (7259), pp. 471–6.

**OBJECTIVE:** To test the hypothesis that homoeopathy is a placebo by examining its effect in patients with allergic rhinitis and so contest the evidence from three previous trials in this series. **DESIGN:** Randomized, double blind, placebo controlled, parallel group, multicentre study. **SETTING:** Four general practices and a hospital ear, nose and throat outpatient department. **PARTICIPANTS:** 51 patients with perennial allergic rhinitis. **INTERVENTION:** Random assignment to an oral 30c homoeopathic preparation of principal inhalant allergen or to placebo. **MAIN OUTCOME MEASURES:** Changes from baseline in nasal inspiratory peak flow and symptom visual analogue scale score over third and fourth weeks after randomization. **RESULTS:** Fifty patients completed the study. The homoeopathy group had a significant objective improvement in nasal airflow compared with the placebo group (mean difference 19.8 l/min, 95 per cent confidence interval 10.4 to 29.1,  $-P=0.0001$ ). Both groups reported improvement in symptoms, with patients taking homoeopathy reporting more improvement in all but one of the centres, which had more patients with aggravations. On average no significant difference between the groups was seen on visual analogue scale scores. Initial aggravations of rhinitis symptoms were more common with homoeopathy than placebo (seven (30 per cent) v two (seven per cent),  $-P+0.04$ ). Addition to these results to those of three previous trials ( $n=253$ ) showed a mean symptom reduction on visual analogue scores of 28 per cent (10.9 mm) for homoeopathy compared with three per cent (1.1 mm) for placebo (95 per cent confidence interval 4.2 to 15.4,  $p=0.0007$ ). **CONCLUSION:** The objective results reinforce earlier evidence that homoeopathic dilutions differ from placebo.

**Facial nerve paralysis following repair of the external ear canal with ionomeric cement.** Granstrom, G., Holmquist, J., Tjellstrom, A. Department of Otolaryngology–Head and Neck Surgery, Goteborg University, Sweden. *gosta.granstrom@orlss.gu.se. Ear, Nose, & Throat Journal* (2000) July, Vol. 79 (7), pp. 495–8.

A 20-year-old man developed a complete facial nerve paralysis following surgical reconstruction of the posterior ear canal with ionomeric cement. The paralysis developed gradually during the second and third postoperative weeks. Six weeks following the complete removal of the cement, the facial nerve recovered completely. The literature contains reports of diffusion of aluminium ions, which can reach toxic levels in tissue fluid and adjacent bone as the cement hardens. This side effect has been reported to cause an inflammatory response in the dura and brain and has led to fatalities. To our knowledge, there has been no other report of an ionomeric cement having a direct toxic effect on peripheral nerve transmission. Because ionomeric cements are used routinely in otosurgery, especially in canal reconstructions where the proximity to the facial nerve is evident, it is important to use caution when introducing ionomeric cements into near-nerve anatomic locations.

**Positional vertigo as a first symptom of a cerebellopontine angle cholesteatoma: case report.** Beynon, G. J., Baguley, D. M., Moffat, D. A., Irving, R. M. Department of Audiology, Addenbrooke's Hospital, Cambridge, UK. *Ear, Nose and Throat Journal* (2000) July, Vol. 79 (7), pp. 508–10.

We report a case of a cerebellopontine angle cholesteatoma whose initial sign was benign paroxysmal positional vertigo (BPPV). Positional vertigo caused by a central pathology is extremely rare and is usually accompanied by other suspicious features. In this case, there were no additional neurotologic symptoms or signs. The only abnormalities were seen on Dix-Hallpike testing, but because they were not consistent with a diagnosis of BPPV, the decision was made to proceed to imaging. Diagnostic rigor is required when evaluating positional vertigo, as with all symptoms of imbalance, if such cases are not to be overlooked.

**Nasal septal perforation: a rare extraintestinal manifestation of Crohn's disease.** Kriskovich, M.D., Kelly, S. M., Jackson, W. D. Division of Pediatric Otolaryngology, Primary Children's Medical Center, Salt Lake City, UT 84113, USA. *Ear, Nose & Throat Journal* (2000) July, Vol. 79 (7), pp. 520–3.

Nasal manifestations of Crohn's disease are quite rare. They are typified by chronic mucosal inflammation, obstructive, bleeding, and occasionally septal perforation – signs and symptoms that are common to many disease states of the nose. Nasal findings, much like oral lesions, can precede the more typical gastroenterologic manifestations of Crohn's disease. Otolaryngologists should be aware of such an association and consider the diagnosis of Crohn's disease in atypical cases of nasal disease. We report the case of a 12-year-old boy who had severe Crohn's disease and a nasal septal perforation, and we discuss this complication in the context of its otolaryngologic manifestations.

**Persistent measles virus infection as a possible cause of otosclerosis: state of the art.** Niedermeyer, H. P., Arnold, W., Neubert, W. J., Sedlmeier, R. Department of Otorhinolaryngology–Head and Neck Surgery, Klinikum r.d. Isar, Technische Universität, Munich, Germany. H.P. Niedermeyer@lrz.tum.de. *Ear Nose and Throat Journal* (2000) August, Vol. 79 (8), pp. 552–4. The etiopathogenesis of otosclerosis is still largely unexplained and remains controversial. Morphologic examinations have shown the presence of a chronic inflammation in otosclerotic tissue. Among the proposed explanations for this inflammation are an immunologic reaction against collagen, mutations of collagen gene 1A1, and a viral infection. In this paper, we focus on the role of measles virus in otosclerosis, and we review the current literature, devoting particular attention to a suspected paramyxoviral etiopathogenesis in Paget's disease. Our examination of footplate fragments by reverse transcription polymerase chain reaction testing in 95 patients with otosclerosis revealed the presence of measles virus RNA in 83 per cent of cases. Quantification of measles virus immunoglobulin G (IgG) in otosclerosis revealed the presence of measles virus RNA in 83 per cent of cases. Quantification of measles virus immunoglobulin G (IgG) in otosclerosis patients indicated that the ratio of antimeasles virus IgG in total IgG was higher in perilymph than in serum. Furthermore, an almost identical incidence of otosclerosis and measles virus-caused mortality in women suggests that women are more susceptible to measles virus infection. Finally, since the introduction of the measles virus vaccination program in Europe, there has been a decline in the incidence of otosclerosis. Moreover, the average age of patients at diagnosis and surgery at our hospital has increased to 54 years. Our findings, when they are considered along with findings regarding the presence of paramyxoviral RNA in Paget's disease, support the hypothesis that measles virus is involved in the etiopathogenesis of otosclerosis.

**Effect of tympanic perforations on the detection of distortion-product otoacoustic emissions.** Le Bourgeois, H. W., 3rd, Anand, V. K., McAuley, J. R., Dickman, J. D., Malphurs, O. Jr. Department of Surgery, University of Mississippi Medical Center, Jackson 39216-4505, USA. *Ear, Nose Throat Journal* (2000) August, Vol. 79 (8), pp. 610–2, 614–6, 618.

The detection of distortion-product otoacoustic emissions (DPOAEs) depends on the viability of the ear's conduction apparatus. However, tympanic membrane perforations and other conductive disorders have not been fully investigated with regard to the examination of DPOAEs. Using the guinea pig model, we made perforations of different sizes and loci on the tympanic membrane and collected DPOAEs data for frequencies between 2,193 and 5,508 Hz for each condition. We found that small perforations, up to 25 per cent of the area of the tympanic membrane, still allow us to detect emissions at the specified frequencies. However, perforations of 50 per cent and larger, as well as those accompanied by traumatic perilymph fistulas and ossicular disarticulations, severely interfered with the detection of DPOAEs. We discuss the clinical relevance of these findings with respect to the potential use of DPOAEs.

**Laser-assisted myringotomy for otitis media: a feasibility study with short-term follow-up.** Reilly, J. S., Deutsch, E. S., Cook, S. Division of Pediatric Otolaryngology, Alfred I. duPont Hospital for Children, Wilmington, Del 19899, USA. *Ear, Nose and Throat*

*Journal* (2000) August, Vol. 79 (8), pp. 650–2, 654–7.

Intermediate-duration middle ear ventilation appears to be a good treatment option for selected children with otitis media. Laser-assisted myringotomy is one way to provide such ventilation. It can provide prompt pain relief and resolution of middle ear effusion and effusion-related hearing loss, and it can provide an opportunity for surveillance of antibiotic-resistance organisms. We performed laser-assisted myringotomy on 97 ears of 54 children over a five-month period. All children had acute or recurrent otitis media or persistent middle ear effusions. Our experience suggests that laser-assisted myringotomy is a feasible treatment option for selected patients. Practitioner experience and patient and family considerations will contribute to the decision whether to use general or topical anesthesia.

**Differential protective effects of neurotrophins in the attenuation of noise-induced hair cell loss.** Shoji, F., Miller, A. L., Mitchell, A., Yamasoba, T., Altschuler, R. A., Miller, J. M. Kresge Hearing Research Institute, University of Michigan, 1301 East Ann St., Ann Arbor, MI 48109-0506, USA. *Hearing Research* (2000) August, Vol. 146 (1–2), pp. 134–42.

The protective efficacy of neurotrophin-3 (NT-3) and brain-derived neurotrophic factor (BDNF) at one or 19 microg/ml was assessed in guinea pigs exposed to 4 kHz octave band noise at 115 dB SPL for five h. BDNF, NT-3 or artificial perilymph was delivered to the scala tympani via a mini-osmotic pump, beginning four days prior to noise exposure and continuing for one week post-exposure. Protection was assessed physiologically by the change in auditory brainstem response (ABR) threshold, and histologically by outer hair cell (OHC) survival. There was a statistically significant increase in OHC survival and a decrease in ABR threshold shift in animals receiving NT-3 at a concentration of 10 microg/ml. In animals receiving one microg/ml NT-3, there was a significant increase in OHC survival in the first row of OHC, but no significant change in ABR threshold, relative to control animals. In animals treated with BDNF, no significant functional or histological protection was observed. The protection afforded by NT-3 (10 microg/ml) treatment was similar in magnitude to that reported previously with glial cell line-derived neurotrophic factor and suggests that several factors may be involved in the protective response.

**Glutathione limits noise-induced hearing loss.** Ohinataab, Y., Yamasoba, T., Schachta, J., Millera, J. M. Kresge Hearing Research Institute, University of Michigan, Ann Arbor, MI 48109-0506, USA. *Hearing Research* (2000) August, Vol. 146 (1–2), pp. 28–34.

The generation of reactive oxygen species (ROS) is thought to be part of the mechanism underlying noise-induced hearing loss (NIHL). Glutathione (GSH) is an important cellular antioxidant that limits cell damage by ROS. In this study, we investigated the effectiveness of a GSH supplement to protect GSH-deficient animals from NIHL. Pigmented guinea pigs were exposed to a 4 kHz octave band noise, 115 dB SPL, for five h. Group 1 had a normal diet, while groups 2, 3 and 4 were fed a seven per cent low protein diet (leading to lowered tissue levels of GSH) for 10 days prior to noise exposure. One hour before, immediately after and five h after noise exposure, subjects received either an intraperitoneal injection of 5 ml/kg body weight of 0.9 per cent NaCl (groups 1 and 2), 0.4 M glutathione monoethyl ester (GSHE; group 3) or 0.8 M GSHE (group 4). Auditory thresholds were measured by evoked brain stem response at two, four, eight, 12, 16 and 20 kHz before and after noise exposure. Ten days post exposure, group 1 showed noise-induced threshold shifts of approximately 20 dB at two, 16 and 20 kHz and 35 to 40 dB at other frequencies. Threshold shifts in group 2 were significantly greater than baseline at two, four, 16 and 20 kHz. GSHE supplementation in a dose-dependent fashion attenuated the threshold shifts in the low protein diet animals. Hair cell loss, as evaluated with cytochrome c, was consistent with the auditory-evoked brainstem response results. Group 2 exhibited significantly more hair cell loss than any of the other groups; hair cell loss in group 3 was similar to that seen in group 1; group 4 showed less loss than group 1. These results indicate that GSH is a significant factor in limiting noise-induced cochlear damage. This is compatible with the notion that ROS generation plays a role in NIHL and that antioxidant treatment may be an effective prophylactic intervention.



**Improvement of pain and function after arthroscopy and arthrocentesis of the temporomandibular joint: a comparative study.** Goudot, P., Jaquinet, A. R., Hugonnet, S., Haefliger, W., Richter, M. *Journal of Cranio-Maxillo-Facial Surgery* (2000) February, Vol. 28 (1), pp. 39–43.

In 1993 and 1994, 720 patients with pain in the temporomandibular joint area were examined and treated. The authors describe their therapeutic protocol. Sixty-two patients were not relieved by conservative nonsurgical therapy and were treated by arthroscopy or arthrocentesis. In both groups the differences in functional result and in pain control were analysed. Results show that both arthroscopy and lavage are useful in improving function and diminishing pain. Arthroscopy shows better results for functional treatment whereas arthrocentesis and arthroscopy show similar results in pain control.

**Relation between choice of partner and high frequency of connexin-26 deafness.** Nance, W. E., Liu, X. Z., Pandya, A. Department of Human Genetics, Virginia Commonwealth University, Richmond 23298-0033, USA. nance@hsc.vcu.edu. *Lancet* (2000) August 5, Vol. 356 (9228), pp. 500–1.

Recessive mutations at the connexin-26 gene locus are now recognized as the cause of nearly half of all cases of genetic deafness in many populations. We suggest that this high frequency is only seen in populations with a long tradition of intermarriage among deaf people. Available data are consistent with the hypothesis that such marriages might well have contributed to the high frequency of connexin-26 deafness in the USA, and could represent a novel mechanism for maintaining specific genotypes at unexpectedly high frequencies.

**Student Research Award 1999: comparative contrast of voice measurements.** Klein, S., Piccirillo, J. F., Painter, C. Department of Otolaryngology–Head and Neck Surgery, Washington University, St. Louis, MO 63110, USA. *Otolaryngology–Head and Neck Surgery* (2000) September, Vol. 123 (3), pp. 164–9.

Currently, a variety of objective and subjective measures are available to describe voice and voice function. Despite these various tools, there is no standard measure of voice function that incorporates both objective and subjective measures. The goal of this research was to study the relationship between objective, subjective, and patient-based measures of voice function. Objective voice function was measured with four laboratory-based parameters (subglottic pressure, airflow at the lips, maximum phonation time, and vocal efficiency), subjective function with the GRBAS (grade, rough, breathy, asthenic, strained) scale, and patient-based function according to an overall global rating of quality. The objective and subjective measures were significantly related to each other ( $p < 0.05$ ); the objective and patient-based measures were also related ( $p = 0.019$ ), but the subjective and patient-based measures were not related. We demonstrate a significant relationship between some but not all measures of voice function. We believe that subjective measures provide additional valuable information not obtained from objective measures alone.

**Image-guided functional endoscopic sinus surgery.** Olson, G., Citardi, M. J. Department of Otolaryngology, Saint Louis University, School of Medicine, MO 63110, USA. *Otolaryngology – Head and Neck Surgery* (2000) September, Vol. 123 (3), pp. 188–94.

**INTRODUCTION:** Computer-aided surgery (CAS) technology in functional endoscopic sinus surgery (FESS) has engendered considerable discussion. **OBJECTIVE:** The goals of this study were to describe CAS preoperative planning (software-based CT image analysis) and to develop intraoperative CAS strategies for endoscopic sinus surgery. **STUDY DESIGN:** Between October 1, 1997, and December 31, 1998, the StealthStation (Sofamor Danek, Memphis, TN) was used in 61 FESS cases, and a retrospective review of the findings was performed. The indication for surgery in all instances was chronic rhinosinusitis refractory to medical management. The StealthStation was used to review all CT scans before surgery. Anatomic fiducial registration supplemented by contour mapping was used. **RESULTS:** Localization accuracy was estimated to be within two mm or better. The Stealth Station was used for both CT image review and intraoperative localization. CAS was useful in the frontal recess, sphenoethmoid region, posterior ethmoid system, and skull base area. CAS was deemed helpful in situations where the surgical anatomy was altered by

previous surgery and extensive inflammatory disease (polyposis, fungal sinusitis, and pansinusitis). **CONCLUSION:** The paradigm of image-guided FESS surgery, which integrates CAS into FESS, will serve to increase surgical effectiveness and decrease surgical morbidity.

**2(F)-fluoro-2-deoxy-D-glucose positron emission tomography is a sensitive tool for the detection of occult primary cancer (carcinoma of unknown primary syndrome) with head and neck lymph node manifestation.** Jungehulsing, M., Scheidhauer, K., Damm, M., Pietrzyk, U., Eckel, H., Schicha, H., Stennart, E. ENT and Nuclear Medicine Departments, University of Cologne, Germany. *Otolaryngology–Head and Neck Surgery* (2000) September, Vol. 123 (3), pp. 294–301.

**BACKGROUND:** The neck lymph nodes are a common site of metastases from carcinoma of unknown primary (CUP syndrome). 2 (18) F-fluoro-2-deoxy-D-glucose positron emission tomography (18-FDG-PET) has been shown to be a sensitive tool for detecting primary malignant lesions as well as metastatic spread. We have prospectively investigated the sensitivity of 18-FDG-PET in detecting occult primary carcinomas with manifestation in the head and neck lymph nodes. **METHODS:** From May 1994 to July 1998, in 723 patients a cancer of the head and neck was diagnosed at the University of Cologne ENT outpatient clinic. The routinely performed staging procedures were chest radiography; full blood count; cervical and liver ultrasound; endoscopy of the nasopharynx, oropharynx, hypopharynx, larynx, and esophagus; and laboratory analyses. After the staging workup, in 27 of 723 patients (3.7 per cent) CUP syndrome had to be presumed because the primary cancer could not be detected. In these patients 18-FDG-PET was performed, and images were reconstructed with a transmission-emission fusion technique. **RESULTS:** In seven of 27 patients (26 per cent) 18-FDG-PET revealed an unknown primary: in two a bronchial carcinoma, in two a nasopharyngeal carcinoma, in one a squamous cell carcinoma of the parotid gland, in one a squamous cell carcinoma of the hypopharynx, and in one a carcinoma of the tonsil. In four of seven patients the occult primary tumour was removed surgically. In eight of 27 patients therapeutic strategy was changed as a result of the 18-FDG-PET findings. **CONCLUSION:** 18-FDG-PET should be performed in all patients with CUP syndrome after conventional diagnostic workup fails to identify the primary.

**Safety of neck rotation for ear surgery in children with Down syndrome.** Todd, N. W., Holt, P. J., Allen, A. T. Department of Otolaryngology, Emory University School of Medicine, Atlanta, Georgia, USA. *The Laryngoscope* (2000) September, Vol. 110 (9), pp. 1442–5.

**OBJECTIVE:** Seek information about spinal cord safety for children with Down syndrome positioned for ear surgery. **STUDY DESIGN:** Prospective consecutive patients, each serving as his or her own control. **METHODS:** Somatosensory evoked potentials were recorded from 17 children who were undergoing elective otolaryngological surgery. None of the patients had neurological symptoms or physical examination findings suggesting cervical spinal cord embarrassment. Specifically, muscle tone was normal or mildly reduced globally, consistent with Down syndrome, and deep tendon reflexes were normal and not appreciably different in the upper and lower extremities. On plain lateral radiographs obtained in the neutral, flexed, and extended positions, the patients' cervical spines were normal. **RESULTS:** When the anesthetized children had their necks placed in either right or left 60 degrees rotation, no significant change in somatosensory latency or amplitude was found. With more than 99.999 per cent certainty, neurologically intact children with Down syndrome with normal plain cervical spine radiographs were not exposed to extra risks by 60 degrees neck rotation during surgery. **CONCLUSION:** Patients with Down syndrome who are neurologically intact and who have normal lateral neck radiographs do not appear at great risk with neck rotation.

**Physical therapy for migraine-related vestibulopathy and vestibular dysfunction with history of migraine.** Whitney, S. L., Wrisley, D. M., Brown, K. E., Furman, J. M. *The Laryngoscope* (2000) September, Vol. 110 (9), pp. 1528–34.

**OBJECTIVES/HYPOTHESIS:** To assess the efficacy of physical therapy for patients with a diagnosis of migraine-related vestibulopathy (MRV) or vestibular dysfunction with a history of

migraine headache. **STUDY DESIGN:** Retrospective case series. **METHODS:** Thirty-nine patients were identified through a retrospective chart review, 14 with a diagnosis of MRV and 25 with migraine headache. The patients were treated with a custom-designed physical therapy exercise program for a mean of 4.9 visits over a mean duration of four months. Patients completed the Dizziness Handicap Inventory (DHI), the Activities-specific Balance Confidence Scale (ABC), and the Dynamic Gait Index (DGI), reported the number of falls they had experienced in the past four weeks, and rated the severity of their dizziness on an analogue scale of 0 to 100 at initial evaluation and at discharge. **RESULTS:** Significant differences were seen before and after therapy in each of the outcome measures used. The average decrease in DHI score was 12 points ( $p < 0.01$ ). ABC scores increased an average of 14 points ( $p < 0.01$ ). Subjects increased their DGI scores an average of four points ( $p < 0.01$ ). The number of patients reporting more than one fall decreased by 78 per cent at discharge. ( $p < 0.05$ ). Baseline symptoms of dizziness decreased an average of 11 points ( $p < 0.05$ ). **CONCLUSIONS:** Patients with MRV and migraine headache demonstrated improvement in physical performance measures and self-perceived abilities after vestibular physical therapy.

**Impact of facial paralysis on patients with acoustic neuroma.** Cross, T., Sheard, C. E., Garrud, P., Nikolopoulos, T. P., O'Donoghue, G. M. Department of Behavioural Sciences, University Hospital, Queen's Medical Center, National Health Service Trust, Nottingham, United Kingdom. *The Laryngoscope* (2000) September, Vol. 110 (9), pp. 1539–42.

**OBJECTIVE:** To assess the psychological distress, the ways of

coping with that stress, and the self-esteem of patients with facial paralysis after acoustic neuroma surgery. Possible predictors and associations between these measures were also explored. **STUDY DESIGN:** Four validated questionnaires were completed by patients with facial paralysis after acoustic neuroma surgery: 1) the Derriford Appearance Scale (DAS) to measure psychological distress, 2) the COPE questionnaire to measure how patients cope with facial paralysis, 3) the Personal Report questionnaire to measure the self-esteem of patients, and 4) the Facial Paralysis Questionnaire (FPQ) to measure the severity of facial paralysis. **PATIENTS:** One hundred three patients with facial paralysis after surgical removal of acoustic tumours. **RESULTS:** Distress spanned a wide range in these patients. There was no statistically significant association between the level of distress and the grade of facial paralysis or between time since operation and levels of distress. Women had higher levels of distress ( $p = 0.02$ ) and a significant negative correlation was found between levels of distress and age ( $r = -0.28$ ,  $p = 0.005$ ). High levels of distress were associated with low levels of self-esteem, as shown by the significant negative correlation between level of distress and self-esteem ( $r = -0.59$ ,  $p = 0.0001$ ), followed by age (beta  $-0.24$ ,  $p = 0.006$ ) and sex (beta  $-0.21$ ,  $p = 0.04$ ). This model explained 44 per cent of the distress variance. **CONCLUSION:** Clinicians must be aware of the distress felt by some patients experiencing facial paralysis. People with low self-esteem, young people, and women suffer from more distress due to the facial palsy. Clinicians should thoroughly counsel patients before and after surgery and should implement measures that increase patients' self-esteem and decrease their distress, especially in these high-risk groups.