

## Abstract Selection

**Transdermal scopolamine for the reduction of postoperative nausea in outpatient ear surgery: a double-blind, randomized study.** Reinhart, D. J., Klein, K. W., Schroff, E. Department of Anesthesiology, University of Utah, McKay-Dee Hospital, Ogden 84409-0370, USA. *Anesthesia and Analgesia* (1994) August, Vol. 79 (2), pp. 281–284.

We evaluated the effect of transdermal scopolamine on the incidence of postoperative nausea and vertigo after outpatient ear surgery (exploratory tympanotomy, mastoidectomy, or endolymphatic sac and oval and round window surgery) in a double-blind, placebo-controlled study. A transdermal patch containing either scopolamine (n = 19) or placebo (n = 20) was placed behind the nonsurgical ear 2 h before surgery. Anaesthesia was induced with thiopental (4–6 mg/kg intravenously (i.v.)), sufentanil (0.5 microgram/kg i.v.), and vecuronium (0.1 mg/kg i.v.) and maintained with isoflurane (0.2 per cent–2 per cent) and nitrous oxide (70 per cent) in oxygen. Patients were observed post-operatively in the recovery room and after discharge for 72 h. There was no significant difference between groups with respect to time in recovery room, time to discharge, incidence of in-house nausea, vomiting, amount of antiemetics required, or post-operative visual analogue scale (VAS) scores while in the hospital. After discharge, there were lower VAS nausea scores (by repeat measures analysis, P<0.05) and a lower reported incidence of nausea (31 per cent vs 62 per cent; P<0.05) and vertigo (6.2 per cent vs 25 per cent; P<0.05) in the active patch group versus the placebo group. There was a higher incidence of dry mouth in the active patch group (44 per cent vs 25 per cent). Seven patients did not complete the study due to failure to keep the patch in place or failure to return the diary from home; and one patient from the placebo patch group was admitted for uncontrolled nausea and vomiting. The authors concluded that transdermal scopolamine is effective in reducing, but not eliminating, post-operative nausea and vertigo after discharge in outpatient ear surgery. Author.

**Intralesional methotrexate in keratoacanthoma of the nose.** Hurst, L. N., Gan, B. S. Department of Plastic Surgery, University Hospital, University of Western Ontario, London, Canada. *British Journal of Plastic Surgery* (1995) June, Vol. 48 (4), pp. 243–246.

Keratoacanthomas are rapidly growing benign cutaneous neoplasms, usually occurring on sun-exposed areas of the body. Although many treatment modalities have been described, surgical excision is currently the treatment of choice for the majority of keratoacanthomas. Occasionally, however, the size and location of these lesions preclude complete excision without extensive reconstruction and/or scarring. Two such cases of large keratoacanthoma of the nose were treated successfully with intralesional methotrexate. The rapid regression and very acceptable final cosmetic result suggest that intralesional methotrexate may play a beneficial role in the treatment of these difficult lesions and encourage further study of the benefits of this treatment modality. Author.

**The origin of the human auditory brain-stem response wave II.** Martin, W. H., Pratt, H., Schwegler, J. W. Garfield Auditory Research Laboratory, Temple University Medical School, Philadelphia, PA 19140, USA. *Electroencephalographical Clinical Neurophysiology* (1995) July, Vol. 96 (4), pp. 357–370.

Auditory brain-stem responses (ABRs) were recorded from human subjects undergoing neurosurgical procedures which exposed the auditory nerve. Scalp recordings indicated that the latency of the negativity between waves I and II (In) and the latency of positive peak II (IIP) were shorter when the nerve was suspended in air than when the nerve was submerged in cerebrospinal fluid or saline, while earlier and later waves remained unaffected. These results could not be attributed to

changes in stimulus or recording parameters or conduction velocity. Computational and somatosensory experimental evidence of stationary potentials generated by physical properties of the volume conductor, including changes in conductivity or geometry, are presented to develop a model of wave IIP generation. The results of this study suggest that wave IIP (and probably In) are manifestations of current flux asymmetries across conductivity boundaries created by the temporal bone-cerebrospinal fluid intradural space-brain-stem interfaces. The current flux asymmetries are generated as the propagating auditory nerve action potential crosses the conductivity boundaries. These results also indicate that the physical characteristics of the volume conductor and neural pathways must be considered when interpreting surface recorded evoked potentials. Author.

**Auditory brain-stem responses evoked by electrical stimulation of the cochlear nucleus in human subjects.** Waring, M. D. Electrophysiology Laboratory, House Ear Institute, Los Angeles, CA 90057, USA. *Electroencephalographical Clinical Neurophysiology* (1995) July, Vol. 96 (4), pp. 338–347.

When auditory nerve function is lost due to surgical removal of bilateral acoustic tumours, a sense of hearing may be restored by means of an auditory brain-stem implant (ABI), which electrically stimulates the auditory pathway at the level of the cochlear nucleus. Placement of the stimulating electrodes during surgical implantation may be aided by electrically evoked auditory brain-stem responses (EABRs) recorded intra-operatively. To establish preliminary standards for human EABRs evoked by electrical stimulation of the cochlear nucleus, short-latency evoked potentials were recorded from six ABI patients who were either already implanted or undergoing implantation surgery. Neural responses were distinguished from stimulus artifact and equipment artifact by their properties during stimulus polarity reversal and amplitude variation. Other properties contributed to further identification of the evoked potentials as auditory responses (EABRs). The response waveforms generally had two or three waves. The peak latencies of these waves (approximately 0.3, 1.3, and 2.2 msec) and the brain-stem localization of the region from which they could be elicited are consistent with auditory brain-stem origin. Author.

**The possible relationship between transient evoked otoacoustic emissions and organ of Corti irregularities in the guinea pig.** Hilger, A. W., Furness, D. N., Wilson, J. P. Department of Communication and Neuroscience, Keele University, UK. *Hearing Research* (1995) April, Vol. 84 (1–2), pp. 1–11.

Otoacoustic emissions are believed to arise from an active process associated with the outer hair cells in the mammalian organ of Corti. They have been attributed to the presence of impedance discontinuities on the basilar membrane which might be caused by hair cell irregularities. To test this hypothesis we have investigated the possible relationship between transient evoked otoacoustic emissions (TEOAEs) and anatomical integrity in the organ of Corti. Click-evoked TEOAEs have been measured from the ear canals of normal, pigmented guinea pigs using an Otodynamics ILO88 analyser. Emissions were present in 18 out of 19 animals tested and the major frequencies observed were consistently present in different measurements over periods of up to ten weeks provided recording conditions were satisfactory. The frequency spectra of the TEOAEs resembled those measured in humans but the latencies of the responses were considerably shorter. In one acute experiment, the TEOAEs were shown to be dependent on metabolic energy as they were lost rapidly following termination with an overdose of anaesthetic. In another case, evoked emissions of long duration (sustained) at about 1 kHz were obtained from both ears. All cochleae examined showed irregularities, especially patches of mainly apical outer hair cell loss of differing extents

However, there was no evidence that substantial lesions coincided consistently with the frequency regions corresponding to the major emissions. Nevertheless, it was noted that the total energy level of emissions was proportional to the total outer hair cell loss, except in one case, where the outer hair cell loss was substantial and the energy level of TEOAEs was considerably lower. Although there is no clear relationship between TEOAEs of specific frequencies and abnormalities at the corresponding cochleotopic location in the organ of Corti which could represent impedance discontinuities, the degree of irregularity may determine the overall emission level. This finding is consistent with the idea that emissions arise as a result of irregularity producing variations in the reflection coefficient. Author.

**Hearing impairment in older adults: new concepts.** Jerger, J., Chmiel, R., Wilson, N., Luchi, R. Department of Otorhinolaryngology and Communicative Sciences, Baylor College of Medicine, Houston, Texas, USA. *Journal of the American Geriatric Society* (1995) August, Vol. 43 (8), pp. 928–935.

**OBJECTIVE:** To review present information about the epidemiology, aetiologies, pathogenesis, evaluation, and quality of life aspects of hearing loss and to present an approach to rehabilitation for hearing loss in older adults. **DESIGN:** A survey of recent findings on the problem of hearing loss in older adults, efficacy of intervention with amplification, and new developments in intervention strategies. **CONCLUSIONS:** The complex nature of hearing problems in older adults involves changes in the auditory periphery as well as in the central mechanisms for processing sound input. These changes affect the social and emotional impact of the hearing disorder. The importance of understanding the many implications of hearing loss on quality of life is emphasized. Both older adults and immediate family members need information and advice about the consequences of age-related hearing loss. The physician has a key role in helping them to overcome negative attitudes toward a hearing handicap. For most older persons, hearing aids alleviate many of the handicaps of hearing impairment. For some older persons who do not benefit adequately from conventional hearing aids, assistive listening devices may be helpful. Many old persons and their relatives are reluctant to confront the reality of hearing handicap and try to hide the fact that they need sound amplification. One important future direction is to foster acceptance of hearing loss and to support the more open use of amplification systems. Author.

**The presence and subtype of Epstein-Barr virus in B and T cell lymphomas of the sino-nasal region from the Osaka and Okinawa districts of Japan.** Tomita, Y., Ohsawa, M., Mishiro, Y., Kubo, T., Maeshiro, N., Kojya, S., Noda, Y., Aozasa, K. Department of Pathology, Osaka University School of Medicine, Japan. *Laboratory Investigation* (1995) August, Vol. 73 (2), pp. 190–196.

**BACKGROUND:** Association between Epstein-Barr virus (EBV) and human malignancies, including sino-nasal lymphoma (SNL), has been suggested. EBV-associated malignancies have been reported to show distinct geographic distribution. **EXPERIMENTAL DESIGN:** In the present study, the presence of an EBV genome and its subtypes (type A and B) were examined in 52 cases of sino-nasal lymphomas of B and T cell type collected from two areas of Japan: Osaka, situated on the mainland, and Okinawa, islands situated in a southwest part of Japan with a subtropical climate. Our previous epidemiologic study showed that the frequency of nasal T cell lymphoma was 3.5 times higher in Okinawa than in Osaka. **RESULTS:** There were no prominent differences in age distribution or sex ratio between these two areas: age ranged 8 to 85 (median 54) years, with a male to female ratio of 1.26:1. Immunophenotypically, 27 cases were B cell type (20 Osaka, seven Okinawa), 20 were T cell type (nine Osaka, 11 Okinawa), and five were undefined. By PCR, EBV positivity in throat washings of normal individuals in Osaka and Okinawa was 52 and 53 per cent, respectively, with marked preponderance of subtype A in both areas. EBV genome was found in six of 15 cases (40 per cent) and four of five cases (80 per cent) of nasal B and T cell lymphomas in Osaka and in three of seven cases (43 per cent) and seven of seven cases (100 per cent) in Okinawa, showing the different frequencies of positivity by immunophenotype but not by district. All but one patient had type A EBV. The *in situ* hybridization confirmed the results of PCR as positive signals in the nucleus of proliferating cells. Latent membrane protein-1 was expressed in 13 of 22 cases (59 per cent). **CONCLUSIONS:** These

findings suggest that EBV, exclusively type A, might be a causative factor in sino-nasal lymphoma of not only T cell but also B cell type in Japan. Author.

**Clonal proliferations of cells infected with Epstein-Barr virus in preinvasive lesions related to nasopharyngeal carcinoma (see comments).** Pathmanathan, R., Prasad, U., Sadler, R., Flynn, K., Raab-Traub, N. Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill 27599-7295, USA. *New England Journal of Medicine* (1995), September 14, Vol. 333 (11), pp. 693–698. Comment in: *New England Journal of Medicine* (1995), September 14, Vol. 333 (11), pp. 724–726.

**BACKGROUND:** The Epstein-Barr virus (EBV) is consistently detected in patients with nasopharyngeal carcinoma. To determine whether EBV infection is an early, initiating event in the development of this malignant tumour, we screened nasopharyngeal-biopsy samples, most of which were archival, for preinvasive lesions, including dysplasia and carcinoma *in situ*. Preinvasive lesions were found in 11 samples, which were tested for the presence of EBV. **METHODS:** EBV infection was detected with *in situ* hybridization for EBV-encoded RNAs (EBERs) and by immunohistochemical staining for latent membrane protein-1 (LMP-1). The larger samples were also tested for the EBV genome with the use of Southern blotting. The expression of specific EBV RNAs was determined by the amplification of complementary DNA with the polymerase chain reaction. **RESULTS:** Evidence of EBV infection was detected in all 11 tissue samples with dysplasia or carcinoma *in situ*. EBERs were identified in all eight samples tested, and LMP-1 was detected in all six of the tested samples. Six of the seven samples tested for the EBV termini contained clonal EBV DNA. Transcription of the latent EBV gene products, EBV nuclear antigen-1, LMP-1, LMP-2A, and the BamHI-A fragment, was detected in most of the samples. Viral proteins characteristic of lytic lesions were not detected. **CONCLUSIONS:** Preinvasive lesions of the nasopharynx are infected with EBV. The EBV DNA is clonal, indicating that the lesions represent a focal cellular growth that arose from a single EBV-infected cell and that EBV infection is an early, possibly initiating event in the development of nasopharyngeal carcinoma. Preinvasive lesions contain EBV RNAs that are characteristic of latent infection but not the viral proteins that are characteristic of lytic infection. The detection of the EBV-transforming gene, LMP-1, in all the neoplastic cells suggests that its expression is essential for preinvasive epithelial proliferations associated with nasopharyngeal carcinoma. Author.

**Impact of cranioplasty on headache after acoustic neuroma removal.** Harner, S. G., Beatty, C. W., Ebersold, M. J. Department of Otolaryngology, Mayo Clinic, Rochester, Minnesota, USA. *Neurosurgery* (1995) June, Vol. 36 (6), pp. 1097–1099; discussion 1099–1100.

We reported previously the incidence of headache after the retrosigmoid removal of an acoustic neuroma as 23 per cent at three months, declining to 9 per cent at two years after surgery. In an attempt to reduce the incidence and the severity of these headaches, we made one change in our surgical procedure, which was to perform a cranioplasty with methyl methacrylate. Twenty-four patients underwent the cranioplasty and were followed for at least three months post-operatively. These patients were matched to 24 patients who did not undergo a cranioplasty. We found a 4 per cent incidence of headache in the cranioplasty group and a 17 per cent incidence in the matched group. No complications were related to this change in our procedure. Author.

**Treatment guidelines for otitis media: the need for breadth and flexibility.** Paradise, J. L. Department of Pediatrics, University of Pittsburgh School of Medicine, Children's Hospital of Pittsburgh, PA 15213, USA. *Pediatric Infectious Diseases* (1995) May, Vol. 14 (5), pp. 429–435.

The recent issuance of guidelines for the diagnosis and treatment of otitis media with effusion in young children is an effort to provide direction for the practitioner in managing this common condition. Although the guidelines may often prove helpful, practitioners will need to maintain some degree of flexibility in dealing with patients both with acute otitis media and with otitis media with effusion, based on specific patient-related and disease-related factors. Author.