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# Abstract selection

**Otoneurological expert system for vertigo.** Kentala, E., Pyykko, T., Auramo, Y. Laurikkala, J., Juhola, M. Department of Otolaryngology, University Hospital of Helsinki, Finland. ernai..kenta.la@huch.fi. *Acta Oto-laryngologica* (1999), Vol. 119 (5), p. 517–21.
We have developed an otoneurological expert system (ONE) to aid the diagnostics of vertigo, to assist teaching and to implement a database for research. The ONE database is set to harvest data on patient history, signs and test results necessary for diagnostic work with vertiginous patients. A method based on pattern recognition was used in the reasoning process. Questions about symptoms, signs and test results are weighted and scored for each disease and the most likely disease is recognized from defined disease profiles. Missing information and uncertainties are solved with a method resembling fuzzy logic. ONE was validated by comparing diagnoses assessed by physicians with those provided by the system. It proved to be a valid decision-maker by solving 65 per cent of the cases correctly, while the physicians' mean was 69 per cent. To improve ONE further, a follow-up should be implemented for the patients, since diagnosing sudden deafness and Meniere's disease during the first visit is often impossible. We aim to obtain new information on diseases involving vertigo by applying adaptive computer applications, such as genetic algorithms, to the reasoning process.

**Surgical treatment of vertigo by utriculostomy: an experimental study in sheep.** Lavinsky, L., Goycoolea, M., Gananca, M. M., Zwetsch, Y. Department of Otorhinolaryngology, Faculdade de Medicina, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil. *Acta Oto-laryngologica* (1999), Vol. 119 (5), pp. 522–7.
The objective of this study was to develop and test an endolabyrinthic microsurgical procedure for treatment of vertigo, the utriculostomy. This involves the application of local heat for obtaining a fistula in the membranous labyrinth, so as to establish communication between the endolymphatic and perilymphathic spaces at the utricle level. Before the procedure, an experimental model using quail eggs was built for pre-evaluation, and macroscopic and histological studies were performed in the temporal bones of three healthy sheep. Following this, the utriculostomy was performed through the oval window in 12 sheep. A microthermocautery was conceived by the first author and developed at Hospital de Clinicas de Porto Alegre. This equipment allows for control of temperature and duration of exposure to heat. Three months after the surgery, the animals were killed. A histological study of the temporal bones was performed to assess whether communication had been created between the endolymphatic and perilymphatic spaces, or whether a neomembrane had developed in the cauterized region. Histological sections of the vestibule of eight animals (three normal, five surgical) were analysed. All non-surgical cases presented a normal utricle wall. Three surgical cases (60 per cent) presented a neomembrane. The absence of identifiable perforations in the utricle wall and the presence of neomembrane areas in 60 per cent of the operated bones suggest that utriculostomy is a promising procedure for the treatment of Meniere's disease.

**Can MRI replace a second look operation in cholesteatoma surgery?** Vanden-Abeele, D., Coen, E., Parizel, P. M., Van de Heyning, P. Department of Otorhinolaryngology, University of Antwerp, Belgium. *Acta Oto-laryngologica* (1999), Vol. 119 (5), pp. 555–61.
The purpose of this paper is to investigate whether a magnetic resonance imaging (MRI) examination of the petrous bones could replace the conventional second look surgical procedure when a canal wall up tympanoplasty procedure has been performed during the first look surgery. Eighteen patients were examined with MRI prior to a second look surgical procedure. MRI was performed on a 1.5 T superconducting system. T2 weighted images before contrast and T1 weighted images after contrast (gadopentate dimeglumine) were obtained. Imaging results were compared with surgical findings. The poor radiosurgical correlation (50 per cent and 61 per cent after re-evaluation) suggests that, at the present time, MRI is not a valid alternative to a second look surgical intervention in the case of cholesteatoma treated by canal wall up tympanoplasty. In our study, MRI was not capable of differentiating small pearls of residual cholesteatoma from surrounding scar tissue.

**Relationship between severity of middle ear mucosal lesion and middle ear pneumatic space volume in patients with otitis media with effusion.** Aoki, K. Mitani, Y., Tuji, T., Hamada, Y., Utahashi, H., Moriyama, H. Department of Otorhinolaryngology, Jikei University School of Medicine, Tokyo, Japan. jad03124@nifty.-ne.jp. *Acta Oto-laryngologica* (1999), Vol. 119 (5), pp. 562–7.
If we assume that the state of suppression of pneumatic cells is the result of suppression of pneumatic cell growth by inflammatory stimulation in the middle ear pneumatic space, it is possible to improve the state of suppression by performing sufficient treatment during the growth period of the pneumatic cells. We indwelt a tympanic membrane ventilation tube (hereinafter referred to as tube) for treatment of otitis media with effusion (OME) in child patients aged three to 13 years and investigated the following points: i) relationship between the severity of inflammation of the lamina propria of middle ear mucosal specimens (hereinafter referred to as lamina propria) collected at the time of tube indwelling and the degree of growth of the pneumatic space; and ii) changes in the pneumatic space associated with treatment by tube indwelling, which was studied by comparing the above-described mucosal severity with the pneumatic space area of two years after tube indwelling, and with increase in the pneumatic space volume measured periodically after tube indwelling. The results indicated that mastoid cell growth suppression is higher in patients with a higher degree of inflammatory changes in the lamina propria. In association with treatment by tube indwelling, effusion accumulated in the pneumatic space and mucosal swelling disappeared early after the treatment, or two months of tube indwelling. After that, in patients with severe mucosal lesion, a long time, 1.5 to two years, was found to be required for repneumatization accompanying regrowth of the temporal bone. We confirmed that the severity of inflammation of the lamina propria is deeply involved in the growth and repneumatization of the pneumatic cells.

**An immunohistochemical study of inducible nitric oxide synthase in the rat middle ear, with reference to tympanosclerosis.** Forseni, M., Hansson, G. K., Bagger-Sjoback, D., Hultcrantz, M. Department of Otorhinolaryngology, Karolinska Hospital, Karolinska Institute, Stockholm, Sweden. *Acta Oto-Laryngologica* (1999), Vol. 119 (5), pp. 577–82.
Tympanosclerosis and myringosclerosis are well-known sequelae after acute and chronic otitis media and are also often seen after treatment of secretory otitis media with ventilation tubes. They sometimes cause serious hearing disability. There is no successful treatment for these conditions. There might be factors triggering an immunological or autoimmune chain reaction, which leads to tympanosclerosis. Intervention with the aim of abolishing this type of response might be possible if an interruption of the chain reaction can be found. Nitric oxide is a radical molecule with the ability to kill pathogens and is produced by the enzyme nitric oxide synthase. Expression of inducible nitric oxide synthase (iNOS) was analysed immunohistochemically in a rat model of

acute otitis media. In rats sacrificed at days three and six after inoculation. iNOS was also strongly expressed in the middle ear mucosa and in the tympanic membrane as well as in the inner ear. In control specimens as well as in infected ones. iNOS was expressed in the tissue of the external ear canal. In rats sacrificed at day 10 and after three months, iNOS was expressed at the same locations, although less frequently. These data indicate that iNOS expression is induced during acute otitis media and suggest that nitric oxide may be important in the host defence against ear infections.

**Costs arising from otitis media.** Niemela, M., Uhari, M., Mottonen, M., Pokka, T. Department of Paediatrics, University of Oulu, Finland. marjon@cc.oulu.fin. *Acta Paediatrica* (1999) May, Vol. 88 (5), pp. 553–6. Comment in: *Acta Paediatr* (1999) May;88(5):487–8.
Otitis media (OM) is one of the most common diseases of childhood, and causes both direct and indirect costs to families and to society. This study calculated the costs arising from OM among 736 day care children whose infections were prospectively monitored for up to 15 months in 10 day care centres in the city of Oulu. The children in the survey had 1.5 attacks of acute OM per person year, made 2.1 visits to a physician (cost $US55 visit (–1) ) and received 1.5 courses of antimicrobials (cost $24 course (–1)). Their parents were absent from work for 1.9 d per person year (cost $85 d(–1)). Either adenoidectomy ($890 operation (–1)) or tympanostomy ($740) was performed on six per cent of the children and the overall costs of surgery were $80 per person year at risk. In total, each single attack of acute OM cost $228. The average annual costs per child younger than two years were $1040, those for children aged two–three years $283 and those for children older than three years $141. The cumulative costs from age six months to seven years were $2549 child (–1). When the attributable risk of OM at a day care centre is taken into account, in Finland, a country with about five million inhabitants, OM gives rise to total annual costs of $US138 million. OM leads to considerable expenses and even expensive preventive measures would be cost-effective.

**Sublingual-swallow immunotherapy (SLIT) with a standardized five-grass-pollen extract (drops and sublingual tablets) versus placebo in seasonal rhinitis.** Pradalier, A., Basset, D., Claudel, A., Couturier, P., Wessel, F., Galvain, S., Andre, C. Hopital Universitaire Louis Mourier, Colombes, France. *Allergy* (1999) August, Vol. 54 (8), pp. 819–28.
BACKGROUND: Recent studies have demonstrated the efficacy of sublingual-swallow immunotherapy (SLIT) in seasonal and perennial rhinitis. Sublingual administration of solutions is not convenient for all patients. The aim of the study was to evaluate the efficacy and safety of immunotherapy administered sublingually, initially as drops, and then as tablets during maintenance therapy. METHODS: A total of 126 patients with grass-pollen seasonal rhinitis were included in this double-blind, randomized, placebo-controlled trial. During the progression of doses phase, the five-grass extract was given as sublingual drops from one to 100 IR/ml. Once the 100 IR dose was reached, the drops were replaced by a single 100-IR sublingual tablet per day. RESULTS: Throughout the grass-pollen season, patients in the active treatment group had significantly lower ($p<0.05$) total conjunctivitis and ocular redness scores. Rhinitis symptoms were not significantly different between the two groups. Patients given the active treatment were significantly ($p<0.02$) less likely to have asthma symptoms. The global medication score showed no significant difference between the two groups. A highly significant difference in favour of the active treatment group was seen in inhaled salbutamol use ($p<0.01$). CONCLUSIONS: Clinical benefits achieved during the present study included significant improvements in conjunctivitis symptoms and prevention of asthma symptoms. The overall safety profile of the active treatment (drops or tablets) was good.

**Comparison of ipratropium bromide 0.03 per cent with beclomethasone dipropionate in the treatment of perennial rhinitis in children.** Milgrom, H., Biondi, R., Georgitis, J. W., Meltzer, E. O., Munk, Z. M., Drda, K., Wood, C. C. National Jewish Medical and Research Center and University of Colorado Health Sciences Center, Denver 80260, USA. *Annals of Allergy, Asthma and Immunology* (1999) August, Vol. 83 (2), pp. 105–11.
OBJECTIVE: To compare the safety and efficacy of ipratropium bromide 0.03 per cent (IB) with beclomethasone dipropionate 0.042 per cent (BDP) in the treatment of perennial rhinitis in children. METHODS: Thirty-three children with nonallergic perennial rhinitis (NAPR) and 113 with allergic perennial rhinitis (APR) were randomly assigned to either IB or BDP for six months in a single-blind, multicenter protocol in which the physician was blinded to treatment. At each visit, patients and physicians rated symptom control of rhinorrhea, nasal congestion, and sneezing. Patients also completed quality of life questionnaires at baseline and after six months of therapy. RESULTS: Both treatments showed a significant improvement in control of rhinorrhea, congestion, and sneezing compared with baseline over the six months of treatment ($p<0.05$). Only for the control of sneezing was BDP consistently better than IB ($P<0.05$). Among the patients given IB, 61 per cent to 73 per cent assessed the control of rhinorrhea as good or excellent on different study visit days, 43 per cent to 60 per cent similarly rated the control of nasal congestion, and 39 per cent to 43 per cent the control of sneezing. The results for BDP were 68 per cent to 78 per cent for the control of rhinorrhea, 55 per cent to 72 per cent for the control of nasal congestion, and 54 per cent to 68 per cent for the control of sneezing. Quality of life assessment documented that both drugs significantly reduced interference with daily activities and disturbance of mood due to rhinorrhea compared with baseline ($p<0.05$). Both treatments were well tolerated with IB causing less nasal bleeding and irritation than BDP. CONCLUSIONS: Ipratropium bromide was safe and effective in controlling rhinorrhea and diminishing the interference by rhinorrhea in school attendance, concentration on school work, and sleep. Ipratropium bromide was as effective as BDP in the control of rhinorrhea and showed a relatively good effect on congestion. Patient and physician assessment favoured BDP in the control of sneezing.

**Evaluation of organic solvent ototoxicity by the upper limit of hearing.** Morioka, I., Kuroda, M., Miyashita, K., Takeda, S. Department of Hygiene, School of Medicine, Wakayama Medical University, Japan. *Archives of Environmental Health* (1999) September to October, Vol. 54 (5), pp. 341–6.
To clarify the effects of organic solvents on hearing, we measured the upper limit of hearing in 93 male workers exposed to organic solvents in seven factories that produced plastic buttons or baths. Medical examinations, environmental monitoring (i.e. concentration in breathing-zone air), and biological monitoring (i.e. concentration in urine) of the organic solvents were also done. Although the organic solvent concentrations in the environmental monitoring were lower than the occupational exposure limit, the upper limit of hearing was reduced in workers who were exposed for five years or more. This reduction was dose-dependent and was related to styrene concentrations in breathing-zone air and mandelic acid concentrations in urine. Even individuals who had normal medical examinations showed a reduced upper limit of hearing. The upper limit of hearing may serve as an early detection indicator of health effects in workers constantly exposed to styrene.

**Variable genetic alterations and survival in head and neck cancer.** Gleich, L. L., Li, Y. Q., Wang, X., Stambrook, P. J., Gluckman, J. L. Department of Otolaryngology-Head and Neck Surgery, University of Cincinnati Medical Center, Ohio 45267-0528, USA. lyon.gleich@uc.edu. *Archives of Otolaryngology–Head and Neck Surgery* (1999) September, Vol. 125 (9), pp. 949–52.
OBJECTIVE: To evaluate multiple genetic loci in patients with head and neck cancer to determine if, as in colorectal carcinoma, there is an orderly occurrence of genetic alterations, and if an accumulation of alterations affects patient survival. DESIGN: Cohort study of patients with head and neck cancer in which fresh tissue was retrieved. SETTING: Academic medical center. PATIENTS: Forty-three patients treated surgically for squamous cell carcinoma of the head and neck from 1991 to 1994. MAIN OUTCOME MEASURES: The DNA from tumor and healthy tissue was evaluated for loss of heterozygosity at p53, retinoblastoma, and chromosome 16q and for amplification of cyclin D1. The respective RNA was probed for levels of p53, p16, p21, and p27 messenger RNA. These findings were compared with tumor stage and patient survival. RESULTS: DNA analysis showed that loss of heterozygosity occurred at p53 in 21 per cent of tumors, at retinoblastoma in 35 per cent, and at 16q in 21 per cent, and that

cyclin D1 was amplified in 42 per cent. Messenger RNA levels of the assessed proteins were variably increased and decreased compared with healthy tissues obtained from the same patients with no discernible pattern. There was no correlation between any one of these genetic alterations and overall survival. When patients were analyzed for loss of heterozygosity at p53, retinoblastoma, 16q, or altered cyclin D1 in combination, 19 patients had no detectable alterations, 13 had one, six had two, and five had three. Single genetic alterations did not affect survival; however, there was a trend toward decreased survival with multiple alterations. The two-year Kaplan-Meier survival in patients with less than one genetic loss was 78 per cent vs 58 per cent in patients with two or more losses. CONCLUSIONS: The lack of a pattern of genetic alterations in head and neck cancer demonstrates that its progression can be mediated by a multitude of pathways, complicating its genetic evaluation. Single genetic alterations do not appear to affect survival; however, when multiple alterations are detected – regardless of combination – survival is affected. This observation lends credence to the theory that multiple genetic alterations contribute to cancer progression; however, the lack of a pattern of this genetic change is a significant obstacle to applying genetic findings to routine cancer therapy.

**The Yung percutaneous mastoid vent: a medium-term follow-up study.** Yung, M. M. Ipswich Hospital NHS Trust, Suffolk, England. yung@doctors.net.uk. *Archives of Otolaryngology–Head and Neck Surgery* (1999) September, Vol. 125 (9), pp. 964–8.
BACKGROUND: I designed a percutaneous mastoid vent to provide permanent ventilation to the middle ear. The vent consists of an outer titanium tube that osseointegrates with the mastoid bone and an inner Teflon tube that protrudes into the mastoid antrum. OBJECTIVE: To follow up all patients who had the mastoid vent inserted since 1995. STUDY DESIGN AND SETTING: Retrospective study of 14 patients with mastoid vents inserted at the ear, nose, and throat clinic of a district general hospital. PATIENTS: All patients had ventilation problems of the ear that failed to respond to conventional treatment. Three patients had persistent otitis media with effusion; 10 had completely collapsed eardrums; and one had failed tympanoplasty with recollapsed eardrum. INTERVENTION AND OUTCOME MEASURE: The mastoid vent extrusion rate, surrounding skin reaction, patency of the vent, and functional results were assessed with a follow-up period of nine to 36 months. RESULTS: Only one vent was extruded in a patient who had a previous cortical mastoidectomy. There was no dermatitis around any of the vents. All vents remained patent, and nine of the 14 ears underwent successful ventilation. Four ears had adhesions within the mastoid antrum, mainly due to a previous cortical mastoidectomy. Six of eight ears with intact ossicles also had improved hearing. CONCLUSION: The percutaneous mastoid vent can provide medium-term ventilation to the middle ear.

**Prevalence of external auditory canal exostoses in surfers.** Wong, B. J., Cervantes, W., Doyle, K. J., Karamzadeh, A. M., Boys, P., Brauel, G., Mushtaq, E. Department of Otolaryngology–Head and Neck Surgery and the Beckman Laser Institute and Medical Clinic, University of California at Irvine, Orange 92868, USA. BJFWONG@BLI.UCI.EDU. *Archives of Otolaryngology–Head and Neck Surgery* (1999) September, Vol. 125 (9), pp. 969–72.
OBJECTIVE: To determine (1) the prevalence of external auditory exostoses in a population of surfers and (2) the relationship between the length of time spent surfing and the prevalence, severity, and location of the exostoses. DESIGN: Cross-sectional epidemiological study. SETTING: General community. PATIENTS: Three hundred seven avid surfers (93.5 per cent males and 6.5 per cent females; age distributions: 11.2 per cent were < or = 20, 67.9 per cent were 21 to 40, 17.5 per cent were 41 to 50, and 3.3 per cent were >50 years). MAIN OUTCOME MEASURES: Questionnaires focusing on surfing habits (number of years, geographic region, and number of days per year of surfing) were correlated with otoscopic findings. A simple grading system was devised, based on the degree of external auditory canal stenosis. Grades of normal, mild, moderate, and severe corresponded to 100 per cent, 99 per cent to 66 per cent, 65 per cent to 33 per cent, and less than 33 per cent effective patent surface area, respectively. RESULTS: There was a 73.5 per cent overall prevalence of external auditory exostoses and a 19.2 per cent overall prevalence of osteomas in the group studies. Of 441 ears with exostoses, 54.2 per cent were mild, 23.6 per cent were moderate and 22.2 per cent were severe. Of individuals who had surfed for 10 years or less, 44.7 per cent had normal ear canals and only six per cent had severely obstructed auditory canals. In comparison, in the group that had surfed for longer than 20 years, only 9.1 per cent had normal auditory canals and 16.2 per cent were severely affected. Of surfers with no exostoses, 61.1 per cent had surfed for 10 years or less. In contrast, of surfers with severe exostoses, 82.4 per cent had surfed for more than 10 years. Finally, the lesions seemed to affect all external auditory canal quadrants equally. CONCLUSION: A positive association exists between the amount of time individuals spend surfing and the presence and severity of exostoses of the external auditory canal.

**Computed tomographic staging and the fate of the dependent sinuses in revision endoscopic sinus surgery.** Bhattacharyya, N. Joint Center for Otolaryngology and Harvard Medical School, Boston, Mass 02115, USA. *Archives of Otolaryngology–Head and Neck Surgery* (1999) September, Vol. 125 (9), pp. 994–9.
OBJECTIVES: To determine the patterns of disease recurrence in chronic sinusitis and to examine the influence of surgical intervention on the presence or absence of disease among sinuses at the time of revision. DESIGN: Retrospective review of case series in a 56-month period. Preoperative computed tomography (CT) scans at the initial surgery and at revision were staged using the Lund and Mackay system. Patterns of disease and CT stage were analyzed with respect to operative intervention, and statistical analysis was conducted to determine the influence of the initial surgical intervention on the patterns of disease at revision. SETTING: An academic general otolaryngology practice. RESULTS: A total of 42 paired cases of primary and revision endoscopic sinus surgery were identified with complete data. The average interval between procedures was 11.8 months, with a mean follow-up of 31.7 months. The average total Lund scores for the CT scan before the primary procedure and at revision were not significantly different at 10.5 and 9.7, respectively ($p = 0.38$). Analysis of 84 sides revealed that performance of a sinusotomy on an initially undiseased sinus resulted in a higher percentage of disease in that sinus at revision, although this was not significant ($p = 0.15$). A sinusotomy performed on an initially diseased sinus was associated with a higher likelihood of disease in that sinus at revision ($p = 0.02$). Similar data were found for the subset analysis of the sphenoid and frontal sinuses. CONCLUSIONS: The Lund and Mackay system can be applied in the setting of revision endoscopic sinus surgery. Sinusotomies should be performed only in sinuses with radiographic disease, and not prophylactically to prevent disease. The standard functional approach may allow disease initially present in the sphenoid or frontal sinuses to normalize without formal sphenoidotomy or frontal sinusotomy.

**The prognostic value of electrocochleography in severely hearing-impaired infants.** Schoonhoven, R., Lamore, P. J., de Laat, J. A., Grote, J. J. Leiden University Medical Centre, ENT Department, The Netherlands. Audiology, Journal of Auditory Communication (1999) May to June, Vol. 38 (3), pp. 141–54.
This paper presents a longitudinal evaluation of electrocochleographic assessment in severely hearing-impaired infants. Electrophysiological data were obtained by transtympanic electrocochleography to tone-burst stimuli at octave frequencies of 500 to 8000 Hz at the age of zero to six years in a group of 126 subjects. The results are compared with auditory thresholds determined at school age in the same children by means of pure-tone audiometry. Cochlear microphonics could be recorded in virtually all ears, although the majority of subjects had hearing losses of 90 dB and more. Compound action potentials (CAPs) showed waveforms varying from normal to a wide range of abnormalities. Audiometric thresholds correlated generally well with the compound action potential (CAP) thresholds obtained in infancy. The error in the predicted audiometric thresholds is between 15 and 20 dB, as compared with 11 d B reported for more moderate hearing losses. It is shown that, in spite of the high stimulus levels used, substantial frequency-specific threshold information is retained. Occasional large discrepancies in thresholds were often associated with markedly abnormal response waveforms. Among the many cases in which no ABR could be elicited, 68 per cent produced detectable electrocochleographic responses in the 1000–4000 Hz range. It is concluded that

electrocochleography is a valuable method for the assessment of residual hearing in infants suspected of having a severe hearing impairment.

**The effectiveness of glucocorticoids in treating croup: meta-analysis.** Ausejo, M., Saenz, A., Pham, B., Kellner, J. D., Johnson, D. W., Moher, D., Klassen, T. P. Thomas C. Chalmer's Center for Systematic Reviews, Children's Hospital of Eastern Ontario Research Institute, 401 Smyth Road, Ottawa, Ontario K1H 8LI, Canada. *British Medical Journal* (1999) September 4, Vol. 319 (7210), pp. 595–600.
OBJECTIVE: To determine the effectiveness of glucocorticoid treatment in children with croup. DESIGN: Meta-analysis of randomised controlled trials that examine the effectiveness of glucocorticoid treatment in children with croup. MAIN OUTCOME MEASURES: Score on scale measuring severity of croup, use of cointerventions (adrenaline (epinephrine), antibiotics, or supplemental glucocortocoids), length of stay in accident and emergency or in hospital, and rate of hospitalisation. RESULTS: Twenty-four studies met the inclusion criteria. Glucocorticoid treatment was associated with an improvement in the croup severity score at six hours with an effect size of –1.0 (95 per cent confidence interval –1.5 to –0.6) and at 12 hours –1.0 (–1.6 to –0.4); at 24 hours this improvement was no longer significant (–1.0, –2.0 to 0.1). There was a decrease in the number of adrenaline treatments needed in children treated with glucocorticoids: a decrease of nine per cent (95 per cent confidence interval two per cent to 16 per cent) among those treated with budesonide and of 12 per cent (four per cent to 20 per cent) among those treated with dexamethasone. There was also a decrease in the length of time spent in accident and emergency (–11 hours, 95 per cent confidence interval –18 to four hours), and for inpatients hospital stay was reduced by 16 hours (–31 to one hour). Publication bias seems to play a part in these results. CONCLUSIONS: Dexamethasone and budesonide are effective in relieving the symptoms of croup as early as six hours after treatment. Fewer cointerventions are used and the length of time spent in hospital is decreased in patients treated with glucocorticoids.

**Treatment of upper aerodigestive tract cancers in England and its effect on survival.** Edwards, D. M., Johnson, N. W. Department of Oral and Maxillofacial Medicine and Pathology, Guy's Sciences, King's Dental Institute, London, UK. *British Journal of Cancer* (1999) September, Vol. 81 (2), pp. 323–9.
The evidence base for head and neck cancers is low with relatively few randomized controlled trials of the two main treatments, surgery and radiotherapy. The aim of the study was to investigate the patterns of surgery and radiotherapy treatment for head and neck cancers in three large areas of England and to investigate their effects on survival. This was a retrospective study of 13,510 cases of head and neck cancers (ICD10: C00-C14, C30-C32) diagnosed and treated from 1984 to 1992 in England. We undertook multivariate analyses of survival using a step-wise Cox proportional hazard model and Kaplan-Meier analysis. There were regional variations in the treatments given to patients. Four in ten patients did not receive currently recommended treatments. In multivariate analyses treatment content and timing had an independent effect on survival. Better survival was associated with surgery for mouth cancers, radiotherapy for laryngeal cancers and combined treatment for pharyngeal cancers independent of tumour and demographic factors. Further research is needed to investigate the findings of this study through large randomized controlled trials and multi-centre audits.

**Endobronchial stenting for severe airway obstruction in relapsing polychondritis.** Faul, J. L., Kee, S. T., Rizk, N. W. Division of Pulmonary and Critical Care Medicine, Stanford University Medical Center, CA 94305, USA. *Chest* (1999) September, Vol. 116 (3), pp. 825–7.
Airway complications of relapsing polychondritis (RP), including tracheobronchial stenosis, can be fatal. This paper describes a life-saving technique (placement of multiple metallic endobronchial stents under conscious sedation) to prevent life-threatening airway closure in a 50-year-old woman with RP. Using fluoroscopic and bronchoscopic guidance, a tracheal stent and three endobronchial metallic stents were deployed in the central airways, with good functional outcome. There were no complications. In critical airway compromise caused by RP, the insertion of endobronchial stents can result in improved symptoms, pulmonary function, and a return to daily activities, without the use of tracheostomy and mechanical ventilation.

**Surgical excision of pilomatrixoma of the head and neck: a retrospective review of 26 cases.** Thomas, R. W., Perkins, J. A., Ruegemer, J. L., Munaretto, J. A. Department of Otolaryngology–Head and Neck Surgery, Madigan Army Medical Center, Tacoma, Wash., USA. Richard.Thomas@nw.amedd.army.mil. *Ear, Nose and Throat Journal* (1999) August, Vol. 78 (8), pp. 544–6, 548.
The objective of this article is to describe our experiences in treating patients for head and neck pilomatrixoma at our institution during a five-year period and to compare our findings with previously published results. To that end, we conducted a five-year retrospective chart review to identify those patients who had a confirmed histopathologic diagnosis of pilomatrixoma involving the head and neck area. We reviewed medical records for presenting signs and symptoms, lesion characteristics, treatment rendered, and outcomes. We identified 26 patients, aged six to 77 (mean: 33), who met the criteria for inclusion in our study. All had been treated for solitary tumors with simple surgical excision and closure. We found no reported adverse outcomes and no tumor recurrences at the surgical sites. These findings support the use of simple surgical excision as the treatment of choice for these tumors.

**Use of a new device, the MicroWick, to deliver medication to the inner ear.** Silverstein, H. Ear Research Foundation, Sarasota, Fla. 34239, USA. earsinus@aol.com. *Ear, Nose and Throat Journal* (1999) August, Vol. 78 (8), pp. 595–8, 600.
A new procedure for delivering medication directly to the inner ear has been developed. This delivery sytsem, called the MicroWick, involves the use of a small wick that is inserted through a tympanic membrane vent tube into the round window niche. Once the wick has been inserted, the patient can self-administer eardrops into the ear canal, where they are absorbed by the wick and transported to the round window membrane and to the inner ear fluids. Inserting the wick is a minor procedure that is performed in the office. This paper describes the indications for and use of the MicroWick.

**Selective neck dissections for squamous carcinoma of the upper aerodigestive tract: patterns of regional failure.** Byers, R. M., Clayman, G. L., McGill, D., Andrews, T., Kare, R. P., Roberts, D. B., Goepfert, H. Department of Head and Neck Surgery, Box 69, The University of Texas M.D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, Texas 77030, USA. *Head and Neck* (1999) September, Vol. 21 (6), pp.499–505.
BACKGROUND: Surgeons have been using selective neck dissections in the treatment of squamous carcinoma of the upper aerodigestive tract for over 20 years. To date, no data is available that can answer the question 'What are the patterns of failure in the neck following a selective neck dissection and is a selective neck dissection a reliable procedure for metastatic disease?' METHODS: To answer this question, the medical records of all patients with squamous carcinoma of the oral cavity, oropharynx, larynx, and hypopharynx treated at The University of Texas M.D. Anderson Cancer Center from January 1, 1985–December 31, 1990, with a selective neck dissection were reviewed. Five hundred seventeen neck dissections were analyzed: suprahyoid (41), supraomohyoid (284), and anterolateral (192). The end point of the study was regional failure and survival. RESULTS: Regional recurrence in patients treated with a superhyoid dissection was 43 per cent with pathologically positive nodes. The regional recurrence in the patients treated with a supraomohyoid neck dissection was 1.9 per cent with pathologically negative nodes, 35.7 per cent with path N1 without postoperative radiation therapy, and 5.6 per cent with postoperative radiation therapy. The neck staged pathologically N2B failed with and without postoperative radiation, 8.3 per cent and 14 per cent, respectively. Thirteen per cent of the anterior/lateral neck dissections failed regionally. If multiple pathologically positive nodes (N2B) were present, the regional failure with postoperative radiation was 30 per cent and 33.3 per cent without prospective radiation. CONCLUSION: The results of this retrospective study suggest that a selective neck dissection is a satisfactory staging procedure and is a definitive operation if all the nodes are pathologically negative. However, if

a node is found to be invaded with cancer, the use of postoperative radiation is advisable. Copyright 1999 John Wiley & Sons Inc., Head Neck 21:499–505, 1999.

**A prospective, longitudinal study of pain in head and neck cancer patients.** Chaplin, J. M., Morton, R. P. Department of Otolaryngology, Head and Neck Surgery, Green Lane Hospital, Green Lane, Auckland, New Zealand. *Head and Neck* (1999) September, Vol. 21 (6), pp. 531–7.
BACKGROUND: Little is known about the epidemiology of pain in head and neck cancer, the effects of curative treatment on this pain, and the impact that pain experience may have on patients' quality of life (QL). METHOD: The prevalence and severity of pain was studied in 93 patients who were first seen with a diagnosis of head and neck cancer, were treated, and remained disease free at two years. QL assessment utilised the life-satisfaction scale and the General Health Questionnaire as specific measures. Pain was assessed by a linear analogue scale anchored by words and numbers. RESULTS: Forty-eight per cent had head and neck pain when first seen, whereas only 25 per cent and 26 per cent had such pain at 12 and 24 months. Approximately eight per cent of patients rated the pain as 'severe' when first seen, whereas three per cent had severe pain at 12 months and four per cent at two years. The prevalence of shoulder and arm pain increased from 14 per cent at diagnosis to 37 per cent at a year and 26 per cent at 24 months, but the percentage of patients with severe pain at any stage postoperatively was only five per cent and two per cent, respectively. Any pain (pain in either in the head and neck or shoulder and arm or both) at two years was strongly predicted by earlier posttreatment pain (at three months or at 12 months). Shoulder and arm pain at two years was strongly correlated with surgical treatment of the neck, although no difference in pain experience was noted between those who had radical neck dissections and those who had more conservative procedures. There was no correlation between radiotherapy to the neck and subsequent shoulder and arm pain. Pain had an adverse effect on the general well-being and psychological distress of head and neck cancer patients who were free of disease. CONCLUSIONS: Pain is common among those presenting with curable head and neck cancer. Pain can be reduced by curative treatment but neck dissection may cause increased shoulder and arm pain. Ongoing pain is predictable and impacts adversely on patients QL. Copyright 1999 John Wiley & Sons, Inc. Head Neck 21:531–537, 1999.

**Positron emission tomography of cortical centers of tinnitus.** Mirz, F., Pedersen, B., Ishizu, K., Johannsen, P., Ovesen, T., Stodkilde-Jorgensen, H., Gjedde, A. Department of Otorhinolaryngology, Aarhus University Hospital, Denmark. mirz@dadlnet.dk. *Hearing Research* (1999) August, Vol. 134 (1–2), pp. 133–44.
Tinnitus is associated with a wide variety of disorders in the auditory system. Whether generated peripherally or centrally, tinnitus is believed to be associated with activity in specific cortical regions. The present study tested the hypothesis that these cortical centers subserve the generation, perception and processing of the tinnitus stimulus and that these processes are suppressed by lidocaine and masking. Positron emission tomography was used to map the tinnitus-specific central activity. By subtracting positron emission tomography images of regional cerebral blood flow distribution obtained during suppression of the tinnitus from positron emission tomography images obtained during the habitual tinnitus sensation, we were able to identify brain areas concerned with the cerebral representation of tinnitus. Increased neuronal activity caused by tinnitus occurred predominantly in the right hemisphere with significant foci in the middle frontal and middle temporal gyri, in addition to lateral and mesial posterior sites. The results are consistent with the hypothesis that the sensation of tinnitus is associated with activity in cortical regions functionally linked to subserve attention, emotion and memory. For the first time, the functional anatomy of conditions with and without the habitual tinnitus sensation was obtained and compared in the same subjects.

**Ewing's sarcoma of the head and neck in children.** Vaccani, J. P., Forte, V., De Jong, A. L., Taylor G. Department of Otolaryngology, The Hospital for Sick Children, University of Toronto, Ont., Canada. *International Journal of Pediatric Otorhinolaryngology* (1999) May 25, Vol. 48 (3), pp. 209–16.
OBJECTIVE: The purpose of this paper was to review our experience with Ewing's sarcoma of the head and neck in children. DESIGN: Retrospective chart review. SETTING: The Hospital for Sick Children, Toronto, Ont., Canada. METHODS: Between 1986 and 1996, 70 cases of Ewing's sarcom were identified. The medical records, roentgenographic and pathology reports were reviewed retrospectively. The gender, age of presentation, location and clinical presentation of the tumor were noted in the cases involving the head and neck. The treatment and follow-up of these patients were recorded. RESULTS: Of the 70 cases of Ewing's, five involved the head and neck (7.1 per cent). The age of presentation ranged from 7.5 to 14 years. An enlarging mass in the mandible was the mode of presentation in three of the five children. Two patients had metastases at initial presentation. All patients received combination treatment regimens with chemotherapy initially, followed by adjuvant surgery and/or radiation. Follow-up ranged from two to 11 years. Three of five patients died of metastatic disease. Two are alive and well with no evidence of disease. CONCLUSIONS: Ewing's sarcoma occurs infrequently in the head and neck in children. An enlarging mass in the mandible is the most frequent mode of presentation. This tumor is treated systemically with high dose chemotherapy and locally with surgical excision where possible. In lesions that are initially unresectable and/or show a poor response to chemotherapy, radiation is used for local control. A good prognosis can be expected if the disease has not metastasized.

**Chronic suppurative otitis media: prevalence and practices among rural South Indian children.** Rupa, V., Jacob, A., Joseph, A. Department of Otolaryngology, Christian Medical College and Hospital, Vellore, India. *International Journal of Pediatric Otorhinolaryngology* (1999) May 25, Vol. 48 (3), pp. 217–21.
In order to determine the prevalence of chronic suppurative otitis media (CSOM) in rural South Indian children, a cross-sectional survey was conducted among 914 children (484 boys and 430 girls) from four primary schools and 12 nurseries (baldwadis; preschool), of adjacent villages of North Arcot District of Tamil Nadu state. The preschool children were aged two–five years, while the ages of the primary school children ranged from six to 10 years. The overall prevalence rate of CSOM was found to be six per cent. The disease was equally prevalent in preschool children (5.7 per cent) and primary school children (6.2 per cent) ($p$ = 0.94). Cholesteatomatous ear disease was observed in 1.2 per cent of children, those of the older age group having a slightly higher prevalence rate (1.5 per cent) than the younger age group (0.7 per cent). Parental beliefs and existing practices with respect to the disease are also presented.

**Is an organic/functional distinction psychologically meaningful in patients with dysphonia?** Millar, A., Deary, I. J., Wilson, J. A., MacKenzie, K. Department of Otolaryngology and Head and Neck Surgery, Glasgow Royal Infirmary, UK. *Journal of Psychosomatic Research* (1999) June, Vol. 46 (6), pp. 497–505.
Dysphonia (hoarseness) is a common clinical condition and, if persistent, patients are referred to otolaryngology clinics for clinical examination. During the examination, a clinical distinction is often made among three types of patients; (1) those with a clear organic basis for dysphonia (cancer, vocal cord palsy); (2) those with some degree of organic pathology; and (3) those with an apparently functional etiology. Functional patients are often characterized as having a psychogenic disorder. This study assessed the psychological validity of the functional category in 204 outpatients (aged 17 to 87 years) with persistent hoarseness of types (2) and (3). Following clinical examination, a consultant otolaryngologist categorized patients as having functional or organic etiology. Subjects were then compared on measures of personality and psychological distress. Dysphonic subjects showed marked psychological distress compared with norms, and reported significantly more previous psychosomatic symptoms than norms, but there were no differences in personality or psychological distress between organic and functional subgroups of dysphonics.