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Abstract Selection

Clear cell carcinoma of the larynx – a case report. Nayak, D. R., Balakrishnan, R., Rao, R. V., Hazarika, P. Department of ENT–Head Neck Surgery, Kastruba Medical College, Manipal 576119, Karnataka, India. lib.kmc@manipal.edu. *International Journal of Pediatric Otorhinolaryngology* (2001) February, Vol. 57 (2), pp. 149–53.
Clear cell carcinoma (CCC) of the larynx is extremely rare and to the best of our knowledge no such case has been reported in the paediatric age group. These tumours resemble the clear cell carcinoma of the major and minor salivary glands. We report such a lesion in a 15 years old boy presenting with hoarseness and an exophytic growth in the glottis. A frontolateral conservation laryngectomy with laryngoplasty was done and over two years follow-up has shown no evidence of loco-regional recurrence and he enjoys an acceptable voice.

Identification and follow-up of children with hearing loss in Mauritius. Gopal, R., Hugo, S. R., Louw, B. Department of Communication Pathology, University of Pretoria, Pretoria 0002, South Africa. *International Journal of Pediatric Otorhinolaryngology* (2001) February, Vol. 57 (2), pp. 99–113.
Early identification of hearing loss followed by a timely and effective intervention programme for children with hearing impairment is necessary to minimize the negative effects of hearing loss on the development of cognition, psychosocial and verbal communication skills. Such early intervention programmes need to be multidisciplinary, technologically sound and most important, it should take cognizance of the specific context (community, country) in which the child and family function. The main aim of this study is to obtain accurate and reliable baseline information regarding current status of the intervention process for children with hearing loss in Mauritius, a developing country. Questionnaire-based interviews were carried out to obtain information from 37 hearing impaired children's parents regarding the median ages of suspicion of hearing loss, diagnosis and placement of hearing aids. The referral process, diagnosis and the management of these children is also described. The findings indicate that children in the study were identified late (median age 24 months) and that the management process is fragmented. The strengths in the current identification and follow-up process namely, parental involvement and established public service structure are highlighted. The weaknesses in the current system are identified, for example, time lapses in the identification process and the provision of hearing aids and the lack of co-ordinated services. The theoretical and empirical research carried out forms the basis of recommendations that have practical implications for an early intervention programme for children with hearing loss in Mauritius and can possibly function as a prototype for other developing countries.

Squamous cell carcinoma of the oropharynx: Ki-67 and p53 can identify patients at high risk for local recurrence after surgery and postoperative radiotherapy. Grabenbauer, G. G., Meuhlfriedel, C., Roedel, F., Niedobitek, G., Hornung, J., Roedel, C., Martus, P., Iro, H., Kirchner, T., Steininger, H., Sauer, R., Weidenbecher, M., Distel, L. Department of Radiation Oncology, University Hospitalo, Erlangen, Germany. gerd.grabenbauer@strahlen.imed.uni-erlangen.de. *International Journal of Radiation Oncology, Biology, Physics* (2000) November 1, Vol. 48 (4), pp. 1041–50.
PURPOSE: To assess the prognostic value of biologic (p53, Ki-67) and clinical factors in squamous cell carcinoma of the oropharynx after radical surgery and postoperative radiotherapy (RT). METHODS AND MATERIALS: Between 1985 and 1995, a total of 102 patients with 104 tumor sites were entered onto the study. Fifty-five primary tumors (53 per cent) involved the tonsils, 26 (25 per cent) the soft palate, and 23 (22 per cent) the base of the tongue. Median age was 53 years (range 36–80 years). The clinical T- and N-categories (UICC 1997) were: T1 (30), T2 (47), T3 (22), T4 (5), N0 (33), N1 (28), N2 (42), and N3 (1). Histologically-clear margins were achieved in all patients by initial surgery. Postoperative RT to the primary and regional lymphatics was given, to a total of 60 Gy in six weeks, and single daily fractions of 2 Gy. The expression of the nuclear p53- and Ki-67-labelling index (LI) was investigated by immunostaining using the monoclonal antibodies D0-7 and MIB 1. The nuclear p53-intensity (p53-I) was antibodies DO-7 and MIB 1. The nuclear p53-intensity (p53-I) was graded into four categories (0/+/++/) by densitometry. Median follow-up was 43 months (range 14–132 months). RESULTS: Cancer-specific survival, disease-free survival, and locoregional tumor control rates were 74 per cent, 69 per cent and 75 per cent, respectively, at five years. Significant prognostic factors for disease-free survival were: T-category (T1/2: 77 per cent vs. T3/4: 53 per cent, $p = 0.02$), tumor site (tonsils: 79 per cent vs soft palate: 70 per cent vs. base of tongue: 45 per cent, $p = 0.05$), duration of RT (or = 46 days: 80 per cent vs. > 46 days: 60 per cent, $p = 0.04$), Ki-67 LI (or = 20 per cent: 84 per cent vs. >20 per cent: 49 per cent, $p = 0.006$) and p53-I (0/+: 56 per cent vs. ++/: 79 per cent, $p = 0.008$). A significant prognostic impact on locoregional control was noted for the duration of RT (or = 46 days: 86 per cent vs. >46 days: 68 per cent, p = 0.01), tumor site (tonsils: 88 per cent vs. soft palate: 67 per cent vs. base of tongue: 51 per cent, p = 0.02), Ki-67 LI (or = 20 per cent LI: 87 per cent vs. >20 per cent LI: 56 per cent, $p = 0.018$), and the p53-I (0/+: 58 per cent vs. ++/: 88 per cent, $p = 0.0006$). On multivariate analysis, the p53 nuclear intensity ($p = 0.002$) and locoregional control. CONCLUSION: Ki-67 labelling index above 20 per cent and a weak p53 nuclear intensity (0/+) are both able to identify patients with squamous cell carcinoma of the oropharynx being at high risk for local recurrence after surgery and postoperative RT. Consequently, in this subgroup an intensification of treatment may be contemplated in prospective trials.

Protective effect of amifostine on dental health after radiotherapy of the head and neck. Rudat, V., Meyer, J., Momm, F., Bendel, M., Momm, F., Bendel, M., Henke, M., Strand, V., Groetz, K., Schulte, A. Department of Radiation, Oncology, University Hospital Heidelberg, Heidelberg, Germany. volker_rudat@med.uni-heidelberg. de. *International Journal of Radiation, Oncology, Biology, Physics* (2000) December 1, Vol. 48 (5), pp. 1339–43.
PURPOSE: The cytoprotective agent amifostine has been shown to reduce the radiation-induced acute and chronic xerostomia in head and neck cancer patients. The purpose of this study was to evaluate whether or not amifostine also reduces the incidence of dental caries associated with the radiation-induced xerostomia. METHODS AND MATERIALS: The dental status before and one year after radiotherapy was retrospectively compared in 35 unselected patients treated as part of theprospective randomized and multicenter open-label Phase III study (WR-38) at the University Hospitals of Heidelberg, Freiburg, and Erlangen. The WR-38 study compared radiotherapy in head andneck cancer with and without concomitant administration of amifostine. RESULTS: Patient and treatment characteristics (particularly the radiation dose and percentage of parotids included in the treatment volume) were equally distributed between the patients who received ($n = 17$) or did not receive ($n = 18$) amifostine. Fifteen patients of the amifostine group showed no deterioration of the dental status one year after radiotherapy as compared to seven patients who did not receive the cytoprotector ($p = 0.105$, two-tailed Fisher exact test). CONCLUSION: Our data suggest a protective effect of amifostine on the dental health after radiotherapy of the head and neck. The dental status should be used as a primary endpoint in future studies on amifostine.

Conventionally fractionated stereotactic radiotherapy (FSRT) for acoustic neuroma. Fuss, M., Debus, J., Lohr, F., Huber, P., Rhein, B., Engenhart-Cabillic, R., Wannenmacher, M. Department of Radiation Oncology, University of Heidelberg, Heidelberg,

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Germany. mfuss@saci.org. *International Journal of Radiation Oncology, Biology, Physics* (2000) December 1, Vol. 48 (5), pp. 1381–7.
PURPOSE: Analysis of local tumor control and functional outcome following conventionally fractionated stereotactic radiotherapy (FSRT) for acoustic neuromas. PATIENTS AND METHODS: From 11/1989 to 9/1999 51 patients with acoustic neuromas have been treated by FSRT. Mean total dose was 57.6 ± 2.5 Gy. Forty-two patients have been followed for at least 12 months and were subject to an outcome analysis. Mean follow-up was 42 months. We analysed local control, hearing preservation, and facial and trigeminal nerve functional preservation. We evaluated influences of tumor size, age, and association with neurofirbomatosis Type 2 (NF2) on outcome and treatment related toxicity. RESULTS: Actuarial two- and five-year tumor control rates were 100 per cent and 97.7 per cent respectively. Actuarial useful hearing preservation rate was 85 per cent at two and five years. New hearing loss was diagnosed in four NF2 patients. Pretreatment normal facial nerve function was preserved in all cases. Two cases of new or impaired trigeminal nerve dysesthesia required medication. No other cranial nerve deficit was observed. In Patients without NF2 tumor size or age had no influence on tumor control and cranial nerve toxicity. Diagnosis of NF2 was associated with higher risk of hearing impairment ($p = 0.0002$), the hearing preservation rate in this subgroup was 60 per cent. CONCLUSION: FSRT has been shown to be an effective means of local tumor control. Excellent hearing preservation rates and 5th and 7th nerve functional preservation rates were achieved. The results support the conclusion that FSRT can be recommended to patients with acoustic neuromas where special attention has to be taken to preserve useful hearing and normal cranial nerve function. For NF2 patients, FSRT may be the treatment of choice with superior functional outcome compared to treatment alternatives.

Rapid strip assay for detection of anti-herpes simplex virus antibodies: application to prediction of varicella-zoster virus reactivation in patients with acute peripheral facial palsy. Ohtani, F., Furuta, Y., Horal, P., Bergstroem, T. Department of Otolaryngology, Hokkaido University School of Medicine, Sapporo, Japan. *Journal of Medical Virology* (2000) September, Vol. 62 (1), pp. 37–41.
Varicella-zoster virus (VZV) reactivation causes acute peripheral facialpalsy in the majority (88 per cent) of patients who lack anti-herpes simplex virus (HSV) antibodies, suggesting that an absence of anti-HSV antibodies is a reliable serological marker for the diagnosis of VZV reactivation in patients who are diagnosed initially as idiopathic peripheral facial palsy (Bell's palsy) (Futura *et al*., 2000) Clinical Infectious Diseases). A simple and rapid immunoassay for detection of anti-HSV antibodies based on HSV type 1 glycoprotein D was developed by modifying the conventional Western blot technique. The assay was evaluated by comparing the results with those of conventional Western blot. In total, 100 sera obtained from patients with acute peripheral facial palsy were tested and judged blindly by two investigators. Twenty-four of 26 HSV-seronegative sera were obtained from patients with VZV reactivation (Ramsay Hunt syndrome or zoster sine herpete). The sensitivity of the assay was over 95 per cent and the specificity was 100 per cent. The two investigators agreed on the diagnosis in 99 of the 100 sera. These results indicate that the rapid strip assay is applicable to prediction of VZV reactivation in patients diagnosed clinically with Bell's palsy before zoster lesions appear or PCR using saliva samples indicates VZV reactivation.

Stereotactic radiosurgery versus stereotactic radiotherapy for patients with vestibular schwannoma: a Leksell Gamma Knife Society 2000 debate. Linskey, M. E. Department of Neurological Society, University of Arkansas for Medical Statistics, Little Rock, USA. linskeymarke@exchange.uams.edu. *Journal of Neurosurgery* (2000) December, Vol. 93 Suppl 3, pp. 90–5.
By definition, the term 'radiosurgery' refers to the delivery of a stereotaxy. Multiple-fraction delivery is better termed 'stereotactic radiotherapy'. There are compelling radiobiological principles supporting the biological superiority of single-fraction radiation for achieving an optimal therapeutic response for the slowly proliferating, late-responding, tissue of a schwannoma. It is axiomatic that complication avoidance requires precise three-dimensional conformality between treatment and tumor volumes. This degree of conformality can only be achieved through complex multiisocenter planning. Alternative radiosurgery devices are generally limited to delivering one to four isocenters in a single treatment session. Although they can reproduce dose plans similar in conformality to early gamma knife dose plans by using a similar number of isocenters, they cannot reproduce the conformality of modern gamma knife plans based on magnetic resonance image-targeted localization and five to 30 isocenters. A disturbing trend is developing in which institutions without nongamma knife radiosurgery (GKS) centers are championing and/or shifting to hypofractionated stereotactic radiotherapy for vestibular schwannomas. This trend appears to be driven by a desire to reduce complication rates to compete with modern GKS results by using complex multiioscenter planning. Aggressive advertising and marketing from some of these centers even paradoxically suggests biological superiority of hypofractionation approaches over single-dose radiosurgery for vestibular schammomas. At the same time these centers continue to use the term radiosurgery to describe their hypofractionated radiotherapy approach in an apparent effort to benefit from a GKS 'halo effect'. It must be reemphasized that as neurosurgeons our primary duty is to achieve permanent tumor control for our patients and not to eliminate complications while maintaining maximum tumor control is improved conformality of radiosurgery dose planning and not resorting to homeopathic radiosurgery doses or hypofractionation radiotherapy schemes.

Results of acoustic neuroma radiosurgery: an analysis of five years' experience using current methods. Flickinger, J. C., Kondziolka, D., Niranjan, A., Lunsford, L. D. Department of Radiation Oncology, University of Pittsburgh School of Medicine, Pennsylvania, USA. jflickin@pop.pitt.edu. *Journal of Neurosurgery* (2001) January, Vol. 94 (1), pp. 1–6. Comment in: *Journal of Neurosurgery* (2001) January, **94** (1), 141–2.
OBJECT: The goal of this study was to define tumor control and complications of radiosurgery encountered using current treatment methods for the initial management of patients with unilateral acoustic neuroma. METHODS: One hundred ninety patients with previously untreated unilateral acoustic neuromas (vestibular schwannomas) underwent gamma knife radiosurgery betwee 1992 and 1997. The median follow-up period in these patients was 30 months (maximum 85 months). The marginal radiation doses were 11 to 18 Gy (median 13 Gy), the maximum doses were 22 to 34 Gy (median 26 Gy), and the treatment volumes were 0.1 to 33 cm^3). The actuarial five-year clinical tumor-control rate (no requirement for surgical intervention) for the entire series was 97.1 ± 1.9 per cent. Five-year actuarial rates for any new facial weakness, facial numbness, hearing-level preservation, and preservation of testable speech discrimination were 1.1 ± 0.8 per cent, 2.6 ± 1.2 per cent, 71 ± 4.7 per cent, and 91 ± 2.6 per cent, respectively. Facial weakness did not develop in any patient who received a marginal dose of less than 15 Gy (163 patients). Hearing levels improved in 19 (seven per cent) of 141 patients who exhibited decreased hearing (Gardner-Robertson Classes II-V) before undergoing radiosurgery. According to multivariate analysis, increasing marginal dose correlated with increased development of facial weakness ($p = 0.342$) and decreased preservation of testable speech discrimination ($p = 0.0122$). CONCLUSIONS: Radiosurgery for acoustic neuroma performed using current procedures is associated with a continued high rate of tumor control and lower rates of posttreatment morbidity than those published in earlier reports.

Analysis of the results obtained in 120 patients with large acoustic neuromas surgically treated via the translabyrinthine-transtentorial approach. Sluyter, S., Graamans, K., Tulleken, C. A., Van Veelen, C. W. Department of Otorhinolaryngology and Neurosurgery, Utrecht University Medical Center, The Netherlands. *Journal of Neurosurgery* (2001) January, Vol. 94 (1), pp. 61–6. Comment in: *Journal of Neurosurgery* (2001) January, Vol. 94 (1), pp. 61–6.
OBJECT: The authors review the results of a series of 120 acoustic neuromas that were surgically treated via the translabyrinthine-transtentorial approach between 1986 and 1999. METHODS: The authors retrospectively evaluated a series of 120 acoustic neuromas with extrameatal diameters of 2 cm or greater, 99 (82.5 per cent) of which had diameters longer than 3 cm. Complete tumor removal, as ascertained using computerized tomography or

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magnetic resonance imaging, was achieved in 110 patients (91.7 per cent). The facial nerve was anatomically preserved in 97 patients (80.8 per cent). The main postoperative complications were cerebrospinal fluid (CSF) leakage through the scalp wound (13.3 per cent) requiring surgical revision in 2.5 per cent, meningitis (9.2 per cent), CSF rhinorrhea (6.7 per cent) requiring surgical revision in 2.5 per cent, and epileptic seizures (the only permanent complication) requiring medication (3.3 per cent). There was no death directly related to the surgery. Long-term follow-up examination of the facial nerve revealed recovery of function to the level of House-Brackmann Grade I or II in 56.2 per cent of the patients. CONCLUSIONS: The results and complications presented in this series are comparable to those reported in the literature. The authors conclude that the combined translabyrinthine-transtentorial approach is a safe route for removing acoustic neuromas with a diameter of 2 cm or greater.

Management of childhood otitis media with effusion by Scottish otolaryngologists. Mills, R. P., McKerrow, W. S. Otolaryngology Unit, Royal Infirmary, Edinburgh, UK. *Journal of the Royal College of Surgeons of Edinburgh* (2000) October, Vol. 45 (5), pp. 321–5.
A prospective audit of 5430 initial consultations and 1602 admissions to Scottish hospitals for surgical treatment of otitis media with effusion in childhood in ear, nose and throat departments throughout Scotland has been carried out. The results suggest that Scottish children are assessed by clinicians of appropriate experience when initially seen in the outpatients and only a minority (30 per cent) are listed for surgery following their first visit. Not all chlidren have a hearing test at their initial clinic visit. In those caess where surgical treatment is not advised at the first visit, a policy of 'watchful waiting' is preferred to medical treatment by most clinicians. Bilateral dry tap rates varied between zero in Forth Valley and 19 per cent in Lanarkshire. Fifty one per cent of operations were carried out by consultants and only three per cent by SHOs. 'Best practice' for the initial management of childhood ear problems is widespread in Scotland but there is room for improvement. There is a need for review of the availability of paediatric audiology services.

Carotid stenting and 'extraterectomy' in the management of head and neck cancer involving the internal carotid artery: technical case report. Nussbaum, E.S., Levine, S. C., Hamlar, D., Madison, K. T. Department of Neurological Surgery, University of Minnesota Hospital and Clinic, Minneapolis 55455, USA. nussb002@maroon.tc.umn.edu. *Neurosurgery* (2000) October, Vol. 47 (4), pp. 981–4.
OBJECTIVE AND IMPORTANCE: Head and neck cancer that invades the internal carotid artery (ICA) represents a significant management challenge. We describe a novel technique that allows for aggressive tumor removal without disrupting blood flow through the affected ICA. CLINICAL PRESENTATION: A 62-year-old man was referred to our institution for management of a neck malignancy involving the ICA. Cerebral angiography suggested that there was good collateral flow from the opposite hemisphere, but the patient reported visual loss in the ipsilateral eye during balloon test occlusion of the ICA. INTERVENTION: A self-expanding stent was deployed in the ICA; it spanned the entire length of the artery involved by tumor. One month later, the patient underwent tumor resection. During surgery, a long ICA arteriotomy was performed directly down to the mesh of the stent. A neoendothelium had formed within the stent, which prevented arterial bleeding. The carotid wall was dissected from the stent without difficulty and removed en bloc with the surrounding tumor. The exposed stent was wrapped circumferentially with a synthetic patch material. The patient tolerated the procedure well, and postoperative angiography demonstrated normal filling of the ICA. CONCLUSION: We describe a novel approach to a patient with head and neck cancer involving the cervical ICA. Preliminary stenting, which allows time for endothelialization before surgery, may permit aggressive tumor resection without interrupting flow through the ICA. This technique obviates the need for complicated carotid reconstruction procedures and avoids the risk of delayed ischemia from carotid sacrifice.

Prevalence of reflux in 113 consecutive patients with laryngeal and voice disorders. Koufman, J. A., Amin, M.R., Panetti, M. Center for Voice Disorders, Department of Otolaryngology, Wake Forest University School of Medicine, Winston-Salem, NC 27157-1034, USA. *Otolaryngology – Head and Neck Surgery* (2000) October, Vol. 123 (4), pp. 385–8.
OBJECTIVES: The goal was to estimate the prevalence of laryngopharyngeal reflux (LPR) in patients with laryngeal and voice disorders. STUDY DESIGN AND SETTING: This was a prospective study of 113 unselected, new patients with laryngeal and voice disorders. Patients completed an extensive medical history form including a reflux symptom profile. A comprehensive otolaryngologic examination was performed with photographic transnasal fibreoptic laryngoscopy. Patients with both symptoms and findings of LPR (78/133, 69 per cent) underwent ambulatory 24-hour double-probe pH monitoring. RESULTS: Seventy-three per cent (57/78) of patients undergoing pH testing had abnormal studies. Thus 50 per cent (57/113) of the entire the study population had pH-documented reflux. Of the diagnostic subgroups studied, the highest incidence of reflux was found inpatients with vocal cord neoplastic lesions (88 per cent) and patients with muscle tension dysphonias (70 per cent). LPR was infrequently found in patients with neuromuscular disorders. CONCLUSION: LPR occurs in at least 50 per cent of all patients at our center with laryngeal and voice disorders at presentation.

Computed tomography stage, allergy testing, and quality of life in patients with sinusitis. Krouse, J. H. Department of Otolaryngology, College of Medicine, University of Florida, USA. *Otolaryngology – Head and Neck Surgery* (2000) October, Vol. 123 (4), pp. 389–92.
BACKGROUND: Chronic rhinosinusitis is a common disease associated with signficant morbidity. CT has been a poor predictor of the extent of symptoms among these patients. Allergic rhinitis is frequently associated with chronic rhinosinusitis. This study examines CT stage, allergic sensitivity, and sinus-related symptoms. METHODS: Forty-eight patients with chronic rhinosinusitis underwent the Rhinosinusitis Disability Index (RSDI), a measure of sinus-related disability. RESULTS: No association was noted between CT stage and severity of sinus-related symptoms. There wsa a significant correlation between CT stage and SET mean end point and between SET mean end point and RSDI physical scale score, as well as between significance on the RSDI emotional scale score and overall score. CONCLUSION: The degree of allergic disease is a better indicator of symptom severity and impairment in quality of life among patients with chronic rhinosinusitis than CT stage. Careful evaluation and treatment of allergic disease is critical in the treatment of chronic rhinosinusitis.

Single-stage laryngotracheal reconstruction in children: a review of 200 cases. Gustafson, L. M., Hartley, B. E., Liu, J. H., Link, D. T., Chadwell, J., Koebbe, C., Myer, C. M., Cotton, R. T. Department of Pediatric Otolaryngology – Head and Neck Surgery, Children's Hospital Medical Center, Cincinnati, USA. *Otolaryngology – Head and Neck Surgery* (2000) October, Vol. 123 (4), pp. 430–4.
OBJECTIVE: We reviewed our experience with pediatric single-stage laryngotracheal reconstruction (SSLTR) to identify factors that affect postoperative outcomes, including tthe need for reintubation and tracheostomy. STUDY DESIGN: Retrospective chart review was done. RESULTS: In total, 190 children underwent 200 SSLTRs; 29 per cent were reintubated, and 15 per cent required postoperative tracheostomy. Currently, 96 per cent are decannulated. The use of anterior and posterior costal cartilage grafting, age less than four years, sedation for more than 48 hours, a leak pressure around the endotracheal tube at greater than 20 cm H2O, and moderate/severe tracheomalacia significantly increased the rate of reintubation. The duration of stenting did not affet outcomes. Children with anterior and posterior grafts and those with moderate or severe tracheomalacia were more likely to need a postoperative tracheostomy. CONCLUSION: SSLTR can be effective for the treatment of pediatric laryngotracheal stenosis. Diligent preoperative assessment of the patient and the patient's airway and close postoperative care are important to the success of this operation.

Use of plain radiography and computed tomography to identify fish bone foreign bodies. Lue, A. J., Fang, W. D., Manolidis, S. Bobby Ray Alford Department of Otorhinolaryngology, Baylor College of Medicine, Houston, Texas, USA. *Otolaryngology – Head and Neck Surgery* (32000) October, Vol. 123 (4), pp. 435–8.

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INTRODUCTION: Fish bones are the most common aerodigestive foreign bodies in adults. Radiographic studies, often ordered for diagnosis, have questionable utility. METHODS: With a laryngoscope, bones from 10 fish species were placed in a variety of positions in a human head and neck cadaver specimen. Plain films and CT scans were obtained and evaluated by blinded readers. RESULTS: Plain radiography exhibited a sensitivity and specificity of 39 per cent and 72 per cent. Cooking did not grossly change radio-opacity. The species of fish affected visibility in soft tissue, without correlatoin to the characteristic optical density of each species. Bones placed orthogonal to the film in the vallecula were most readily identified. CT scanning correctly identified nine of 10 bones. CONCLUSIONS: Plain radiography poorly visualizes fish bone foreign bodies in soft tissue; visibility varied with fish species, location, and orientation. CT is the test of choice to radiographically diagnose fish bone impactions.

New approach for cochlear implantation: cochleostomy through the middle fossa. Colletti, V., Fiorinto, F. G., Carner, M., Sacchetto L., Giarbini, N. ENT Department, University of Verona, Italy. *Otolaryngology – Head and Neck Surgery* (2000) October, Vol. 123 (4), pp. 467–74.
The middle fossa approach was used in 11 patients with profound bilateral hearing loss for insertion of a cochlear implant. Fibroadhesive otitis media ($n = 1$), bilateral cavity radical mastoidectomy ($n = 1$), autoimmune inner ear disease ($n = 2$), previous cranial trauma ($n = 1$), genetic prelingual deafness ($n = 5$), and otosclerosis ($n = 1$) were the causes of deafness. A cochleostomy was performed on the most superficial part of the basal turn, and the electrode array was inserted up to the cochlear apex. Speech perception tests (one to nine months after cochlear implant activation) yielded better results in these patients compared with a homogeneous group of postlingually deaf patients operated on through the traditional transmastoid route. Insertion of the implant through the middle fossa cochleostomy furnishes the possibility of stimulating areas of the cochlea (i.e. the middle and apical turns) where a greater survival rate of spiral ganglion cells is known to occur, with improvement of information regarding the formants relevant for speech perception.

Inlay butterfly cartilage tympanoplasty (Eavey technique) modified for adults. Lubianca Neto, J. F. Department of Otorhinolaryngology, Fundacao Faculdade Federal de Ciencias Medicas of Porto Alegre. *Otolaryngology – Head and Neck Surgery* (2000) October, Vol. 123 (4), pp. 492–4.
INTRODUCTION: Popular myringoplasty techniques include either an underlay or an onlay approach using tissues such as temporalis fascia or perichondrium as grafts. In 1998, Eavey described an inlay tympanoplasty technique in children using cartilage graft which resembled butterfly wings. This technique as effective for closure of tympanic membrane perforations, while being more rapid for the surgeon and more comfortable for the patient. The aim of ths study was to describe our results with modification of this technique in adults under local anaesthesia. METHODS AND MATERIAL: Cartilage butterfly inlay tympanoplasty was carried out in 20 adult patients to close small-to-medium tympanic membrane perforations over aperiod of 11 months. Compared with the original decription, three modifications are noted: (1) adult patients, (2) local anesthesia, and (3) noskin graft over the cartilage. RESULTS: Two patients were not evaluated in terms of hearing gain because they had profound preoperative hearing loss. Fourteen patients had a postoperative four pure-tone average between 0 and 9 dB, three patients between 10 and 20 dB, and one patient greater than 20 dB. The graft 'take rate' was 90 per cent (18/20) at the end of the follow-up period (mean follow-up 7.25 months). Seventeen of 18 successful cases had cartilage grafts that were intact and dry at the last visit. CONCLUSIONS: The tympanoplasty technique described by Eavey is effective to close tympanic membrane perforation in adults as well as children. The technique modifications introduced here (abandonment of the skin graft and local anaesthesia) reduced surgery time and postoperative morbidity. Postoperative results compared with those of the original technique were good.

Controlled multicenter study on chronic suppurative otitis media treated with topical applications of ciprofloxacin 0.2 per cent solution in single-dose containers or combination of polymyxin B, neomycin, and hydrocortisone suspension. Miro, N. Servicio de Otorrinolaringologia, Hospital Universitario Germans Trias i Pujol, Badalona, Spain. *Otolaryngology – Head and Neck Surgery* (2000) November, Vol. 123 (5), pp. 617–23.
Otic drops of either ciprofloxacin and hydrocortisone suspension combination of polymyxin B, neomycin, and hydrocortisone suspension (PNH) were administered for six to 12 days to patients (14–71 years old) with chronic suppurative otitis media in a randomized, nonblinded, multicenter clinical trial. Two hundred thirty-two enrolled patients were analysed for efficacy on a 'per protocol' basis. The most frequently identified causal agents were Staphylococcus aureus (28 per cent of the patients), Pseudomas aeruginosa (19 per cent), and Staphylococcus sp (nine per cent). Clinical success was observed in 91 per cent and 87 per cent of the CIP- and PNH-treated patients, respectively. At one-month follow-up, four per cent of CIP and six per cent of PNH patients showed a relapse of otorrhea. Bacteriologic eradication was seen in 89 per cent and 85 per cent of patients in the CIP and PNH groups, respectively. At one-month follow-up, reinfection or recurrence of infection appeared in three patients in the PNH group and in one patient in the CIP group. Both treatments were well tolerated. The most frequently reported adverse events were pruritus, stinging, and earache. Audiometric tests did not show changes attributable to study drugs in each but one patient in the PNH group. This clinical trial shows that topical 0.2 per cent ciprofloxacin solution in single-dose containers is effective and well tolerated in patients with chronic suppurative otitis media.

Otogenic brain abscess: review of 41 cases. Sennaroglu, L., Sozeri, B. Department of Otolaryngology – Head and Neck Surgery, Hacettepe University Medical Faculty. *Otolaryngology – Head and Neck Surgery* (2000) December, Vol. 123 (6), pp. 751–5.
Forty-one patients in whom otogenic brain abscess was diagnosed and has been treated since 1968 are presented. Sixty-five per cent of the patients were between five and 15 years of age. All patients had chronic otitis media, and 95 per cent had cholesteatoma. Abscess was located in the temporal lobe in 54 per cent, in the cerebellum in 44 per cent, and in both locations in two per cent of the cases. Most patients had radical mastoidectomy and evacuation of the abscess through the mastoidectomy (61 per cent). In addition to mastoidectomy, burr hole drainage was used in 20 per cent and craniotomy in 15 per cent. The most common microorganism involved was Proteus. Overall mortality in this series is 29 per cent, but after 1976, when CT became available for the diagnosis and follow-up, the mortality rate was reduced to 10 per cent.

Development and application of a health-related quality-of-life instrument for adults with cochlear implants: the Nijmegen cochlear implant questionnaire. Hinderink, J. B., Krabbe, P. F., Van den Broek, P. Department of Otorhinolaryngology, University Hospital Nijmegen, The Netherlands. *Otolaryngology – Head and Neck Surgery* (2000) December, Vol. 123 (6), pp. 756–65.
OBJECTIVE: The goal was to develop a quantifiable, self-assessment health-related quality of life (QoL) instrument for use in cochlear implant (CI) users. DESIGN: Three principal domains were distinguished: physical, psychological, and social. Forty-five postlingually deaf adult multichannel CI users and 46 deaf candidates on the waiting list for CIs (control group) participated in the study. RESULTS: Retrospective scores for the CI group corresponded very well with the scores for the control group. Current QoL scores were substantially higher for all six subdomains. Internal consistency and testretest reliability coefficients proved to be satisfactory, and the ability to detect clinical changes with the Nijmegen Cochlear Implantation Questionnaire (NCIQ) proved to be good. CONCLUSIONS: The psychometric characteristics of the NCIQ proved to be reliable and probably valid and sensitive to clinical changes. The data obtained with the NCIQ reflected that the instrument was able to detect that a CI had significant effects on several health-related QoL aspects, including the social and psychological domains.

Outcomes of acid suppressive therapy in patients with posterior laryngitis. Ulualp, S. O., Toohill, R. J., Shaker, R. Department of Otolaryngology and Communication Sciences, Medical College of Wisconsin, Milwaukee, USA. *Otolaryngology – Head and Neck Surgery* (2001) January, Vol. 124 (1), pp 16–22.
OBJECTIVE: To evaluate the results of acid suppressive therapy (AST) in posterior laryngitis (PL) patients with and without

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documented pharyngeal acid reflux (PAR). METHODS: The charts of all patients with PL who received AST and who had undergone pharyngeal pH monitoring were reviewed. Results of AST in patients with PL with and without documented PAR were evaluated by laryngeal examination, symptom scores, and self-reported overall benefit. RESULTS: Thirty-nine patients with PL had received AST and undergone pharyngeal pH monitoring. Follow-up ranged from two to 27 months. Laryngeal findings were improved in patients with and without PAR. Pretreatment total symptom scores were significantly greater than that of posttreatment in patients with and without documented PAR. Overall benefit from AST was reported by the majority of PL patients with and without documented PAR. CONCLUSION: These findings support the use of AST to reduce or eliminate signs and symptoms in PL regardless of documentation of PAR.

A fine-cut technique for permanent laryngeal sectioning. Roy, S., Lundy, D. S., Marcillo, A. S., Casiano, R. R. Department of Otolaryngology, the University of Miami, FL 33101, USA. *Otolaryngology – Head and Neck Surgery* (2001) January, Vol. 124 (1), pp. 31–4.
BACKGROUND: A new technique for permanent section of the human spinal cord has provided superior images over those produced with traditional methods. Application of this technique for sections of the human larynx may yield cost-effective, efficient, and accurate laryngeal anatomic dissections. STUDY DESIGN AND METHODS: This study was designed to evaluate this technique for dissections of the human larynx. Laryngeal sections from cadavers were submerged in a celloidin solution, a derivative of wallpaper plaster, and frozen to –15 degrees C. After preparation, axial and coronal cuts of 100 microm were made with a Macrocut Tome sectioning system. RESULTS: Sections were completed in approximately 30 hours. Digitized photographs of the laryngeal sections provide detailed images of precise anatomic relationships. CONCLUSION: Celloidin-based sectioning of the human larynx yields precise anatomic information beyond standard radiographic imaging and previous permanent laryngeal sectioning techniques in a cost-efficient and timely manner. Black and white fine-section photographs are provided.

Efficacy of evaluation of audiometric results after stapes surgery in otosclerosis. I. The effects of using different audiologic parameters and criteria on success rates. de Bruijn, A. J., Tange, R. A., Dreschler, W. A. Department of Otorhinolaryngology – Head and Neck Surgery, Academic Medical Center, University of Amsterdam, The Netherlands. *Otolaryngology – Head and Neck Surgery* (2001) January, Vol. 124 (1), pp. 76–83.
The Committee on Hearing and Equilibrium of the American Academy of Otolaryngology – Head and Neck Surgery proposed guidelines to provide more uniformity in reporting hearing results after middle ear surgery. One of the proposals was to include the hearing thresholds at 0.5, 1, 2, and 3 kHz in a four-frequency pure-tone average (PTA) and to use post-operative bone-conduction (BC) levels rather than preoperative BC levels in describing postoperative air-bone gaps (ABGs). The hearing results of 451 stapes operations were evaluated to analyse to what extent the choice of different audiologic criteria affects success rates. It appeared that choice of PTA significantly affects postoperative gain in air-conduction thresholds and ABG levels. If one takes the improvements in speech-reception thresholds as the gold standard, the gain in air-conduction correlates best with a gain in speech-reception threshold if a higher frequency, such as 3 or 4 kHz, is included in a four-frequency PTA. Also, choice of preoperative or postoperative BC in computing postoperative ABGs had a significant effect on the mean postoperative ABG levels, showing more favourable results with the use of preoperative BC thresholds.

Efficacy of evaluation of audiometric results after stapes surgery in otoscleosis. II. A method for reporting results from individual cases. de Bruijn, A. J., Tange, R. A., Dreschler, W. A. Department of Otorhinolaryngology and Head and Neck Surgery and the Department of Audiology (Professor Dreschler), Academic Medical Center, University of Amsterdam. *Otolaryngology – Head and Neck Surgery* (2001) January, Vol. 124 (1), pp. 84–9.
To standardize the reporting of hearing results after middle ear surgery, the Committee on Hearing and Neck Surgery proposed two levels of guidelines: level one for reporting summary data and level two for reporting raw data. The Committee encourages the reporting of raw data from each individual case. However, in studies in which the examined population is too large, this can yield difficulties. With respect to this point, we designed a method for a simple visual presentation of hearing results in an attempt to provide data from each individually operated ear in a patient group. In this method the relation between the preoperative and postoperative bone-conduction levels is evaluated to assess overclosure and iatrogenic cochlear damage, and the relation between postoperative gain in air conduction and the preoperative air-bone gap is evaluated as a measure of technical success rate. This results in two plots, which we called the Amsterdam Hearing Evaluation Plots. Audiometric data from 451 stapes operations were used to demonstrate the use of the Amsterdam Hearing Evaluation Plots.

Auricular pseudocysts: a treatment with the Chulalongkorn University vacuum device. Supiyaphun, P., Decha, W., Kerekhanjanarong, V., Hirunwiwatkul, P. Department of Otolaryngology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand. *Otolaryngology – Head and Neck Surgery* (2001) February, Vol. 124 (2), pp. 213–6.
Auricular pseudocysts are rare lesions that present as an asymptomatic cystic swelling of the anterior surface of the auricle, particularly the antihelix. Typically, the pseudocysts contain viscous straw-yellow fluid similar in appearance to olive oil; however, a clear pale yellow serous transudate may also be encountered. Various therapeutic approaches have been used with variable success. We describe a simple small vacuum device called the Chulalongkorn University vacuum device, which was developed in our center. The device can be easily made anywhere by any surgeon. We report the outcome in 17 patients treated by means of needle aspiration plus application of the Chulalongkorn University vacuum device for five days. A complete resolution of the lesion wsa obtained in 15 (88.2 per cent) patients. Because the procedure is safe and effective and does not require an operating room setting, it may be accepted as an option in the treatment of auricular pseudocysts.

Is carotid reconstruction for avanced cancer in the neck a safe procedure? Katsuno, S., Takemae, T., Ishiyama, T., Usami, S. I. Department of Otolaryngology, Shinshu University School of Medicine, Asahi 3-1-1, Matsumoto 390-8621, Japan. *Otolaryngology – Head and Neck Surgery* (2001) February, Vol. 124 (2), pp. 222–4.
Head and neck surgeons hesitate to resect the carotid artery because of the postoperative risk of neurologic sequelae. On the other hand, there is no curative therapeutic option for head and neck cancer involving the carotid artery, except for complete tumour removal. A retrospective review of all published articles in the English literature dealing with carotid reconstruction for head and neck cancer from 1987 to 1998 was performed. There were only 11 articles, including our series, that reported outcomes of this procedure. Among the 148 patients of this series, major neuromorbidity wsa 4.7 per cent, and mortality occurred in 6.8 per cent of the patients. Combined major neuromorbidity and mortality was 10.1 per cent. Because total removal of the advanced cancer is the only therapy that can offer the patients a chance for cure, head and neck surgeons should aggressively perform carotid resection and reconstruction.

The cost of running a multidisciplinary head and neck oncology service – an audit. Corbridge, R., Cox, G. Oxford Center for Head and Neck Oncology, Radcliffe Infirmary, United Kingdom. *Revue de laryngologie – Otologie – rhinologie* (2000), Vol. 121 (3), pp. 151–3.
It seems well established that a modern approach to the treatment of head and neck cancer should involve a multidisciplinary team. However, the 'cost' of providing such a service in the United Kingdom has not as yet been investigated. We present the results of a detailed, prospective audit which has identified and quantified the 'cost' of input from all members of the team involved in the in-patient care of these patients. We also discuss some of the resourcing issues, which arise from this work.

Retraining therapy for chronic tinnitus. A critical analysis of its status. Kroener-Herwig B., Biesinger, E., Gerhards, F., Goebel, G., Verena-Greimel, K., Hiller, W. Clinical Psychology and Psy-

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chotherapy, University of Goettingen, Germany. bkroene@uni-goettingen.de. *Scandinavian Audiology* (2000), Vol. 29 (2), pp. 67–78.
Tinnitus retraining therapy (TRT), as conceived of mainly by PJ Jastreboff, has recently receiving attention in the media, as well as in seminars and congresses on treatment methods for chronic tinnitus. It is often claimed, though not explicitly in scientific publications, that TRT is currently the most efficacious therapy for tinnitus, obtaining improvement rates exceeding 80 per cent. This assertion is highly significant in light of the most likely increasing prevalence of chronic tinnitus and ensuing urgent demand for effective therapies. Before examining the evidence regarding the effectiveness of TRT, Jastreboff's theoretical idea of tinnitus as aneurophysiological disorder is examined and evaluated. This idea is plausible and is supported by some evidence. The interaction between neuroacoustic and emotional processes emphasized by Jastreboff is, however, neither new nor sufficiently elaborated with respect to the underlying psychological factors. The TRT intervention technique and its main components 'directive counselling' and use of 'noise generators' are found to be theoretically well grounded. The lack of detailed information concerning TRT implementation and the potential consequence that differing interventions may be labelled TRT are criticized. Jastreboff's obvious opposition to psychologists; participation in TRT, despite the increase in efficacy they could affect through utilization of cognitive restructuring techniques and behaviour modification interventions, is also criticized. Finally, studies regarding the efficacy of TRT are reviewed and severe methodological shortcomings (e.g. lack of controlled randomized group studies) in TRT research are noted. Taking the current state of evidence into account, we conclude that there is no convincing empirical support for the assumption that TRT is superior to other treatments, since no comparative studies have been conducted. It is contended that there is more substantial empirical support for the efficacy of cognitive-behavioural interventions in reducing tinnitus annoyance and tinnitus-related suffering. The necessity for methodologically well-designed studies to pinpoint effect sizes of TRT and compare them with other techniques, especially cognitive-behavioural ones, is emphasized.

Symptoms, disability and handicap in unilateral peripheral vestibular disorders. Effects of early presentation and initiation of balance exercises. Bamiou, D. E., Davies, R. A., McKee, M., Luxon, L. M. Neuro-otology Department, National Hospital for Neurology and Neurosurgery, London, UK. dorisea@indirect.co.uk. *Scandinavian Audiology* (2000), Vol. 29 (4), pp. 238–44.
The aim of this study was to obtain a profile of disability and handicap in patients with unilateral peripheral vestibular disorders presenting to a specialist tertiary care unit. Two validated questionnaires were sent to patients who had a unilateral peripheral vestibular disorder as defined by strict criteria. Some patients still suffered moderate handicap and disability five years after the initial symptoms related to a unilateral vestibular disorder, although the duration of symptoms (onset to questionnaire completion) did not correlate with severity of disability and handicap, as judged by questionnaire scores. However, patients presenting to the unit within six months of onset of vertigo commenced balance exercises significantly earlier and had significantly lower disability scores than patients presenting later. A high proportion of non-compliance with, and delay in initiation of, vestibular rehabilitation exercises early initation of, Cooksey Cawthorne exercises were significantly correlated with low disability and questionnaire scores. These findings suggest that early referral to a specialist balance unit for patients with persistent dizziness is associated with better outcome.

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