

Abstract Selection

Voice gains following thyroplasty may improve over time. Billante, C. R., Clary, J., Childs, P., Netterville, J. L. Department of Otolaryngology, Vanderbilt University Medical School, Nashville, Tennessee 37212, USA. cbillante1964@aol.com. *Clinical Otolaryngology and Allied Sciences* (2002) April, Vol. 27 (2), pp. 89–94. Type I thyroplasty for unilateral vocal fold paralysis restores voice. The purpose of this study was to evaluate measures of voice before thyroplasty, and at three months and one year after surgery. Of interest was whether vocal improvement in the first weeks after surgery was maintained or even enhanced over time. A total of 40 patients with unilateral paralysis underwent type I thyroplasty with or without arytenoid adduction. Perceptual, acoustic and aerodynamic measures of voice were studied. Perceptual analysis determined that optimal postoperative voice quality evolved over the first year. Acoustic indices of perturbation demonstrated progressive improvement over 12 months, whereas pitch and intensity ranges were increasingly extended. Postoperative glottal flow rates were normalized and phonation times were significantly longer, with benefits maintained over time. All perceptual, aerodynamic and acoustic measures of voice were improved three months after thyroplasty, with many measures further improved at one year. Such findings provide evidence that voice outcome progressively evolves over the first 12 months after surgery.

Auricular reconstruction of helical rim defects: wedge resection revisited. Radonich, M. A., Zaher, M., Bisaccia, E., Scarborough, D. Affiliated Dermatology, Cosmetic Surgery Center, Dublin, Ohio 43017, USA. *Dermatologic Surgery* (2002) January, Vol. 28 (1), pp. 62–5.

Auricular reconstruction of an acquired helical rim defect is a clinical situation commonly encountered by dermatologic surgeons. Wedge resection is a simple but effective method for repairing such helical rim defects. This is a review of the wedge resection, outlining its indications, limitations, surgical technique, postoperative care, and pitfalls.

Airway management of the severely retrognathic child: use of the laryngeal mask airway. Stocks, R. M. S., Egerman, R., Thompson, J. W., Peery, M. Department of Otolaryngology–Head and Neck Surgery, LeBonheur Children's Medical Center, 777 Washington, P-110, Memphis, TN 38105, USA. rstocks@utm.edu. *Ear, Nose and Throat Journal* (2002) April, Vol. 81 (4), pp. 223–6.

Successful airway management of an infant or child with moderate to severe retrognathia first requires recognition of a potential problem. If the child cannot be intubated in a standard fashion, the use of a laryngeal mask airway (LMA) should be considered. We describe two cases wherein a toddler and an infant with severe retrognathia failed multiple attempts at traditional intubation. Both had an anterior larynx and hypoplasia of the mandible. In both cases, a subsequent LMA was successfully placed. The severely retrognathic newborn or child presents to the physician a unique challenge in airway management. Techniques to manage this difficult pediatric airway are different from those used in the adult. Otolaryngologists should be aware of this intubation technique and include it in their armamentarium of airway-management strategies. The LMA is not recommended as the technique of choice for securing a difficult airway, but it is an effective alternative when indicated, and it might be life-saving.

Magnetic resonance imaging in the diagnosis of subglottic cysts of infancy: case report and review. Mobley, S. R., Pacheco, E., Josephson, G. D. Department of Otolaryngology, College of Medicine, University of Illinois at Chicago, USA. *Ear, Nose and Throat Journal* (2002) April, Vol. 81 (4), pp. 260, 293–4, 266–7.

Subglottic cysts can cause stridor and respiratory distress in the infant. The diagnosis of subglottic cysts is often confirmed during direct laryngoscopy and bronchoscopy. We describe the case of a six-month-old boy with bilateral subglottic cysts that were

preoperatively diagnosed by magnetic resonance imaging (MRI). We also review the current literature on the diagnosis and treatment of subglottic cysts. Up until now, 63 cases of subglottic cysts were reported in the literature since 1966, and most were diagnosed by direct endoscopy. In this article, we describe a new case and we provide the first published report of the novel use of MRI in diagnosing this lesion.

Epidemiology of chronic suppurative otitis media among Saudi children – a comparative study of two decades. Zakzouk, S. M., Hajjaj, M. F. profzakzouk@hotmail.com. *International Journal of Pediatric Otorhinolaryngology* (2002) February 25, Vol. 62 (3), pp. 215–8.

An epidemiological survey to study the prevalence of chronic suppurative otitis media (CSOM) was completed in February 2000. About 9540 children aged up to 12 years were examined clinically by an otolaryngologist. All 125 children (1.3 per cent) suffered from CSOM, nine with cholesteatoma. The prevalence of CSOM in the Central province of the Kingdom was found to be 1.15 per cent. During the first study done in 1982, the prevalence was 5.5 per cent among 293 children aged six to 18 years. In the second study done and completed in 1991 where 6421 children were surveyed, 94 children found to suffer from CSOM i.e. 1.5 per cent with six children have cholesteatoma. These results showed a decrease in incidence of CSOM in the Central province, although in other parts of the Kingdom, the prevalence was found to be as high as 2.89 per cent. The factors predisposing to or associated with chronic ear disease will be discussed, and the results will be compared with results published from other centers.

Clinical characteristics of aero-digestive foreign bodies in neurologically impaired children. DeRowe, R., Massick, D., Best, D. J. Department of Otolaryngology–Head and Neck Surgery, Pediatric Otolaryngology, Tel-Aviv Medical Center, Sackler School of Medicine, Tel-Aviv University 6 Weizman Street, 64239, Israel. derowe@netvision.net.il. *International Journal of Pediatric Otorhinolaryngology* (2002) February 25, Vol. 62 (3), pp. 243–8.

OBJECTIVE: To determine if children with neurological impairment are at additional risk for foreign body aspiration or impaction and if they present with a different clinical course than normal children. **DESIGN:** Retrospective cohort study. **SETTING:** Tertiary care children's hospital. **PATIENTS AND OTHER PARTICIPANTS:** A retrospective chart review of 328 consecutive procedures for aero-digestive foreign body removal over a six year period was performed. Of these patients 52 (15.9 per cent) were identified with neurological impairment. **RESULTS:** Compared with the non-impaired children, those with neurological impairment were older, diagnosed later, hospitalized longer and had a higher incidence of complications. **CONCLUSION:** A greater index of suspicion is needed to timely treat aero-digestive foreign bodies in children with neurological impairment. These children may not be receiving the necessary attention when presenting with non-specific symptoms.

Treatment of chronic suppurative otitis media with ofloxacin in hydroxypropyl methylcellulose ear drops: a clinical/bacteriological study in a rural area of Malawi. Van Hasselt, P., Van Kregten, E. Ear Clinic, Bamaleta Lutheran Hospital, Ramotswa, Botswana. pvhasselt@planet.nl. *International Journal of Pediatric Otorhinolaryngology* (2002) March 15, Vol. 63 (1), pp. 49–56.

Chronic supportive otitis media in young children is a major problem in Africa, with socio-economic consequences at a later age. Common treatment regimens with antibiotics are expensive and often not practically feasible. Therefore, a project was started to develop a low-cost and effective treatment in a rural area of Malawi by studying the clinical efficacy of an inexpensive application regimen of ofloxacin (0.075 per cent) in hydroxypropyl methylcellulose (1.5 per cent) ear drops. In earlier studies with this

treatment regimen, it was possible to cure approximately 70 per cent of ears. The aim of this study was to find out whether the bacteriological spectrum cultured from wet ears before and after treatment, and patterns of resistance to antibiotics, played a role in the percentage of cures. Patients, with long-standing chronic suppurative otitis media were clinically assessed and treated with suction cleaning and instillation of ear drops on days one, three, seven and 10. Bacterial swabs were taken for culture and sensitivity tests for ofloxacin were on days one and 10 from the ears that were still discharging. After 21 weeks, the ears were assessed again clinically. Clinical cure was considered to be complete cessation of otorrhea. Ninety of 104 tested patients (124 ears) completed the study. About 73 per cent of the ears had become dry by day 10. This dropped to 42 per cent after 21 weeks. Before treatment, most ears (91 per cent) harbored fecal bacteria, *Proteus mirabilis* (74 per cent) and enterococci (60 per cent) being the most frequently isolated microbes. The second group of frequently cultured bacteria were water bacteria e.g. pseudomas species and other non-fermenters (69 per cent), whereas the classical otitis media pathogens were detected only in 15 per cent of ears. Before treatment, 9.7 per cent of strains were resistant to ofloxacin, most (30/35) of which were cultured from ears that were eventually cured. After treatment, fecal and water bacteria were still the most frequently found, with 36 per cent new strains and an overall sensitivity to ofloxacin of 58 per cent. Bacterial resistance did not appear to play an important role in the outcome of treatment. These data rather suggest a very high risk of infection due to poor hygiene conditions. Medical treatment can only have a longer-lasting effect if accompanied by community-based programs that focus on improvement of hygiene. A public health approach is necessary alongside a medical approach for the management of CSOM.

Intensity-modulated radiotherapy in the treatment of nasopharyngeal carcinoma: an update of the UCSF experience. Lee, N., Xia, P., Quivey, J. M., Sultanem, K., Poon, I., Akazawa, C., Akazawa, P., Weinberg, V., Fu, K. K. Department of Radiation Oncology, University of California, San Francisco, 505 Parnassus Avenue, L-08, San Francisco, CA 94143, USA. leen@radonc17.ucsf.edu. *International Journal of Radiation Oncology, Biology, Physics* (2002) May 1, Vol. 53 (1), pp. 12–22.

PURPOSE: To update our experience with intensity-modulated radiotherapy (IMRT) in the treatment of nasopharyngeal carcinoma (NPC). **METHODS AND MATERIALS:** Between April 1995 and October 2000, 67 patients underwent IMRT for NPC at the University of California-San Francisco (UCSF). The disease was Stage I in eight (12 per cent), Stage II in 12 (18 per cent), Stage III in 22 (33 per cent), and Stage IV in 25 (37 per cent). IMRT was delivered using three different techniques: 1) manually cut partial transmission blocks, 2) computer-controlled auto-sequencing segmental multileaf collimator (SMLC) and 3) sequential tomotherapy using a dynamic multivane intensity modulating collimator (MIMiC). Fifty patients received concomitant cisplatin and adjuvant cisplatin and 5-FU chemotherapy according to the Intergroup 0099 trial. Twenty-six patients had fractionated high-dose-rate intracavitary brachytherapy boost and one patient had gamma knife radiosurgery boost after external beam radiotherapy. The prescribed dose was 65–70 Gy to the gross tumor volume (GTV) and positive neck nodes, 60 Gy to the clinical target volume (CTV), 50–60 Gy to the clinically negative neck, and five to seven Gy in two fractions for the inter-cavitary brachytherapy boost. Acute and late normal tissue effects were graded according to the Radiation Therapy Oncology Group (RTOG) radiation morbidity scoring criteria. The local progression-free, local-regional progression-free, distant metastasis-free rates, and the overall survival were calculated using the Kaplan-Meier method. **RESULTS:** With a median follow-up of 31 months (range seven to 72 months), there has been one local recurrence at the primary site. One patient failed in the neck. Seventeen patients developed distant metastases; five of these patients have died. The four-year estimates of local progression-free, local-regional progression-free, and distant metastases-free rates were 97 per cent, 98 per cent and 66 per cent respectively. The four-year estimate of overall survival was 88 per cent. The worst acute toxicity documented was as follows: Grade 1 or 2 in 51 patients, Grade 3 in 15 patients, and Grade 4 in one patient. The worst late toxicity was Grade 1 in 20 patients, Grade 2 in 15 patients, Grade 3 in seven patients, and Grade 4 in

one patient. At three months after IMRT, 64 per cent of the patients had Grade 2, 28 per cent had Grade 1, and eight per cent had Grade 0 xerostomia. Xerostomia decreased with time. At 24 months, only one of the 41 evaluable patients had Grade 2, 32 per cent had Grade 1, and 66 per cent had Grade 0 or no xerostomia. Analysis of the dose-volume histograms (DVHs) showed that the average maximum, mean and minimum dose delivered were 79.3 Gy, 74.5 Gy, and 49.4 Gy to the GTV, and 78.9 Gy, 68.7 Gy, and 36.8 Gy to the CTV. An average of only three per cent of the GTV and three per cent of the CTV received less than 95 per cent of the prescribed dose. **CONCLUSION:** Excellent local-regional control for NPC was achieved with IMRT. IMRT provided excellent tumor target coverage and allowed the delivery of high dose to the target with significant sparing of the salivary glands and other nearby critical normal tissues.

Molecular genetic analysis of the NF2 gene in young patients with unilateral vestibular schwannomas. Mohyuddin, A., Neary, W. J., Wallace, A., Wu, C. L., Purcell, S., Reid, H., Ramsden, R. T., Read, A., Black, G., Evans, D. G. R. University Department of Medical Genetics and Regional Genetic Services, St Mary's Hospital, Hathersage Road, Manchester M13 0JH, UK. atai_1999@yahoo.com. *Journal of Medical Genetics* (2002) May, Vol. 39 (5), pp. 315–22.

Neurofibromatosis type 2 (NF2) must be suspected in patients presenting with a unilateral vestibular schwannoma at a young age who are therefore at theoretical risk of developing bilateral disease. We identified 45 patients aged 30 years or less at the onset of symptoms of a unilateral vestibular schwannoma. Molecular genetic analysis of the NF2 gene was completed on peripheral blood samples in all 45 and on 28 tumour samples. No pathogenic NF2 mutations were identified in any of the blood samples. NF2 point mutations were identified in 21/28 (75 per cent) tumour samples and loss of heterozygosity (LOH) in 21/28 (75 per cent) tumour samples. Both mutational hits were identified in 18/28 (65 per cent) tumour samples. In one multilobular tumour, one (presumably first hit) mutation was confirmed which was common to different foci of the tumour, while the second mutational event differed between foci. The molecular findings in this patient were consistent with somatic mosaicism for NF2 and the clinical diagnosis was confirmed with the presence of two meningiomas on a follow up MRI scan. A further patient developed a contralateral vestibular schwannoma on a follow up MRI scan in whom neither of the truncating mutations in the vestibular schwannoma were present in blood. It is important when counselling patients with unilateral vestibular schwannomas to identify (1) those at risk of bilateral disease, (2) those at risk of developing other tumours, and (3) other family members at risk of developing NF2. Comparing tumour and blood DNA cannot exclude mosaicism in the index case and cannot, therefore, be used to predict those at risk of developing further tumours. However, identification of both mutations or one mutation plus LOH in the tumour and exclusion of those mutations in the blood samples of the sibs or offspring of the affected case may be sufficient to render further screening unnecessary in these relatives.

Hearing restoration after resection of an intracanalicular vestibular schwannoma: a role for emergency surgery? Case report and review of the literature. Meiteles, L. Z., Liu, J. K., Couldwell, W. T. Department of Otolaryngology, New York Medical College, Valhalla, New York, USA. *Journal of Neurosurgery* (2002) April, Vol. 96 (4), pp. 796–800.

Patients with vestibular schwannomas (VSs) most commonly present with sensorineural hearing loss, which is often insidious or gradual. Up to 26 per cent of patients may present with sudden hearing loss, however, which poses an important surgical challenge. Sudden hearing loss has been attributed to spasm or occlusion of the labyrinthine artery resulting from tumor compression, and it is usually treated with corticosteroids. Hearing preservation surgery is not usually attempted in patients who have poor or nonserviceable hearing preoperatively. The authors describe a 68-year-old man with complete deafness of the left ear since childhood, who developed sudden, profound sensorineural hearing loss in the right ear. Magnetic resonance imaging revealed a small right-sided intracanalicular tumor. Treatment with high-dose corticosteroids produced only minimal improvement in hearing. Subsequent emergency decompression and resection of a VS resulted in rapid improvement and restoration

of hearing, with facial nerve preservation. Although most neurotologic lesions in patients with hearing in only one ear are managed nonsurgically, resection of small tumors in the setting of sudden hearing loss should be considered in selected cases. This finding indicates that a therapeutic window may exist during which sudden hearing loss caused by intracanalicular tumors is reversible.

Salicylate protects hearing and kidney function from cisplatin toxicity without compromising its oncolytic action. Li, G., Sha, S. H., Zotova, E., Arezzo, J., Van de Water, T., Schacht, J. Department of Otolaryngology, Albert Einstein College of Medicine, Bronx, New York, USA. *Laboratory* (2002) May, Vol. 82 (5), pp. 585–96.

Salicylate has recently been demonstrated to protect against the auditory and vestibular side effects of aminoglycoside antibiotics. Similarities in the toxic mechanisms suggest salicylate as a treatment strategy to prevent the ototoxic side effects of cisplatin (CDDP). We first tested protection of the inner ear in Wistar rats receiving a single infusion of 16 mg CDDP/kg body weight with or without treatment with 100 mg/kg salicylate (bid) for five days beginning one day before the CDDP infusion. Cisplatin induced a threshold shift of more than 30 dB (at 14 kHz; measured by auditory evoked brain stem response) that was significantly reduced by salicylate. We then examined the protective potential of salicylate on the cochlea, peripheral nerves, and kidney in a rat model of breast cancer – Fisher344 rats implanted with highly metastatic MTLn3 breast cancer cells. Animals received 3×5 mg CDDP/kg (given every third day), and salicylate was administered at 100 mg/kg (bid) from two days before to three days after CDDP treatment. Salicylate significantly attenuated the CDDP-induced threshold shift from approximately 20 dB (at 16 and 24 kHz) to approximately 5 dB, and drastically reduced the loss of cochlear outer hair cells. Likewise, salicylate protected kidney function (measured as plasma blood urea nitrogen and creatinine levels) from CDDP toxicity. Protection of nerve conduction velocities of both sensory and motor nerves was minimal. The chemotherapeutic efficacy of CDDP on suppression of tumor mass and cancer cell metastasis remained unaffected by salicylate. The results suggest that administration of salicylate may become the basis of an effective therapeutic intervention against the ototoxic and nephrotoxic side effects associated with CDDP chemotherapy.

Reducing hearing, ownership, and use of hearing aids in elderly people in the UK – the MRC Trial of the Assessment and Management of Older People in the Community – a cross-sectional survey. Smeeth, L., Fletcher, A. E., Ng, E. S. W., Stirling, S., Nunes, M., Breeze, E., Bulpitt, C. J., Jones, D., Tulloch, A. Centre for Ageing and Public Health, London School of Hygiene and Tropical Medicine, London, UK. liam.smeeth@lshtm.ac.uk. *Lancet* (2002) April 27, Vol. 359 (9316), pp. 1466–70.

BACKGROUND: Reduced hearing in elderly people is important because it is disabling and potentially treatable. We aimed to assess the prevalence of reduced hearing in elderly people and levels of ownership of hearing aids and use. **METHODS:** We have done a cross-sectional survey of people aged at least 75 years in 106 family practices in the UK. We obtained self-reported data on hearing difficulties for 32,656 people and gave 14,877 a whispered voice test (response rate 78 per cent). **FINDINGS:** 2537 (eight per cent) of 32,656 participants reported a lot of difficulty hearing and 13,630 (42 per cent) a little or a lot of difficulty. 3795 (26 per cent) of 14,877 participants who completed the whispered voice test (95 per cent CI 23–29) failed the test, the proportion rising sharply with age. Following wax removal, 343 passed a retest, leaving 3452 (23 per cent, 20–26) who failed the test, even after wax removal if present. 998 (46 per cent) of 2180 people wearing a hearing aid at the time of testing failed the whispered voice test. More than half the people who failed the test did not own a hearing aid. 2200 (60 per cent) of 3846 people who owned a hearing aid said they used it regularly. Level of use was strongly related to perceived benefit. **INTERPRETATION:** Reduced hearing is common and provision of hearing aids inadequate in elderly people. Many people who own a hearing aid do not use it regularly, and even when wearing their aid many still have socially disabling levels of hearing loss. A major source of morbidity in elderly people could be alleviated by improvements in detection and management of reduced hearing.

Effect of MRI noise on cochlear function. Radomskij, P., Schmidt, M. A., Heron, C. W., Prasher, D. Magnetic Resonance Unit and Department of Audiology, St George's Hospital, London, UK. p.radomskij@ucl.ac.uk. *Lancet* (2002) April 27, Vol. 359 (9316), pp. 1485.

A disadvantaged of magnetic resonance imaging (MRI) is the high level of noise produced (peaking between 122 dB and 131 dB). We used otoacoustic emissions (OAEs) as a method to quantify the effect of MRI-generated noise on the cochlea. OAEs were measured in 16 patients before and after MRI and in 16 controls. OAEs decreased in patients after MRI, but the controls, who were not exposed to MRI noise, showed no decrease over the same period. The change in OAEs shows a clear effect of MRI noise on cochlear function, despite use of earplugs. The importance of correctly fitted earplugs cannot be underestimated.

Management of common voice problems: Committee report. Zeitels, S.M., Casiano, R. R., Gardner, G. M., Hogkian, N. D., Koufman, J. A., Rosen, C. A. Department of Otolaryngology and Laryngology, Harvard Medical School, and the Division of Laryngology, Massachusetts Eye and Ear Infirmary, Boston, MA 02114, USA. smzeitels@meei.harvard.edu. *Otolaryngology–Head and Neck Surgery* (2002) April, Vol. 126 (4), pp. 333–48.

OBJECTIVE: This report provides the reader with a state-of-the-art update on a number of common voice problems that require phonosurgical intervention. **STUDY DESIGN AND SETTING:** This multiauthor review is not a position statement of the American Academy of Otolaryngology–Head and Neck Surgery (AAOHN) and may reflect institutional preference and/or bias. It arose from a panel discussion at the AAOHN meeting in 2000. **RESULTS:** We provide a review of the genesis and management of papillomatosis, dysplastic glottal epithelium, arytenoid granulomas, Reinke's edema, and vocal-fold paralysis. **CONCLUSIONS AND SIGNIFICANCE:** In the past decade, there has been a dramatic expansion of knowledge regarding a variety of voice disorders and associated treatment. There has been a convergence of basic science investigations in anatomy, physiology, and pathology with clinical trials of treatment, both surgical and nonsurgical. This information should provide the reader with current insight into critical management issues of the aforementioned disorders.

Effectiveness of second-generation fibrin glue in endonasal operations. Vaiman, M., Eviatar, E., Segal, S. Department of Otolaryngology, Assaf Harofeh Medical Center, Israel. shteren20@hotmail.com. *Otolaryngology–Head and Neck Surgery* (2002) April, Vol. 126 (4), pp. 388–91.

We evaluated the efficacy and safety of the Quixil fibrin sealant after its application to endonasal operative sites. A total of 153 patients underwent nasal surgery. The rate of hemorrhagic complications was compared in the group with nasal packing and in the group in whom fibrin glue was used to stop postoperative bleeding. Our results indicate that the application of Quixil fibrin glue to the operative sites in various endonasal operations provides effective hemostasis and sealing. This fibrin glue is a more effective hemostatic agent than foam nasal packing and provides no complications, as can occur with packing. Patients with hypertension have no greater risk for postoperative bleeding if Quixil is used.

Congenital cholesteatoma: 20 years' experience at The Children's Hospital of Philadelphia. Potsic, W. P., Korman, S. B., Samadi, D. S., Wetmore, R. F. The Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine, 19104, USA. potsic@email.chop.edu. *Otolaryngology–Head and Neck Surgery* (2002) April, Vol. 126 (4), pp. 409–14.

OBJECTIVE: We report our experience with congenital cholesteatoma over a span of 20 years with an emphasis on presenting characteristics and predictors of outcome. **METHODS:** We conducted a retrospective review from 1981 through 2000. **RESULTS:** One hundred and seventy-two congenital cases were identified in 167 patients. Five patients had bilateral disease. The majority (72 per cent) were found in boys, with an average age of five years. Hearing loss was slight to moderate. When confined to one quadrant, cholesteatoma was anterosuperior in 82 per cent of cases; 47 per cent had cholesteatoma in two or more quadrants. Ossicular chain involvement was found in 43 per cent of all cases, and mastoid extension was evident in 23 per cent. The rate of

recurrent disease was directly related to extent and number of quadrants involved. **CONCLUSION:** To our knowledge, this is the largest series of congenital cholesteatomas to be reported. This review confirms the male predominance and predilection for the anterosuperior quadrant. The extent of cholesteatoma and its relation to residual disease should be used as a guide for planning a second-look procedure.

Tympanosclerosis: long-term hearing results after ossicular reconstruction. Teufert, K. B., De La Cruz, A. House Ear Institute and University of Southern California, School of Medicine, Los Angeles 90057, USA. *Otolaryngology-Head and Neck Surgery* (2002) March, Vol. 126 (3), pp. 264–72.

OBJECTIVE: The study goal was to analyse long-term hearing results and factors likely to affect outcome after ossicular reconstruction in patients with tympanosclerosis, particularly tympanosclerotic stapes fixation. **METHODS:** We conducted a retrospective chart review of the past 10 years. The short- and long-term (up to nine and a half years) hearing results of first-stage and second-stage operations for middle ear tympanosclerosis in 203 consecutive patients, performed in a tertiary referral otologic private practice, are presented. There were 160 tympanoplasties and 43 tympanoplasties with mastoidectomy performed, with ossicular fixation secondary to tympanosclerosis in 135 cases. Of these 203, 42.9 per cent were primary cases, with the majority being planned second-stage or revision procedures. **RESULTS:** The average preoperative air-bone gap (ABG) was 30.9 dB. The average short-term postoperative ABG was 17.4 dB with closure of the ABG within 20 dB in 64.6 per cent. The success rate (ABG or = 20 dB) for patients with ossicular fixation was 65.3 per cent. Partial sensorineural hearing loss occurred in one per cent of the patients, and none experienced profound sensorineural hearing loss (dead ears). There was no statistically significant change from short-term to long-term follow-up in either ABG or air PTA, with mean differences of only 0.3 and 2.0 dB, respectively. The mean time to the last follow-up was 1.6 years. **CONCLUSION:** Ossicular reconstruction in individuals with tympanosclerosis can yield satisfactory, lasting hearing results with a low incidence of complications and no dead ears.

Posterior and attic wall osteoplasty: hearing results and recurrence rates in cholesteatoma. Babighian, G. Department of Otorhinolaryngology and Otolaryngology, Az. Ospedaliera-Università, Padua, Italy. g.babighian@ve.nettuno.it. *Otolaryngology and Neurology* (2002) January, Vol. 23 (1), pp. 14–7.

OBJECTIVE: To assess the efficacy of a surgical technique, the temporary attic and posterior canal wall osteoplasty, in preventing cholesteatoma recurrence. **DESIGN/PARTICIPANTS:** The records of 94 patients submitted to tympanoplasty for cholesteatoma in the ear, nose, and throat department of a main city hospital between 1989 and 1997 were retrospectively reviewed. **INTERVENTIONS:** Intact canal wall procedure with attic and posterior canal wall temporary removal was performed in 47 cases. A canal wall down operation was performed in the 47 remaining cases. The follow-up ranged from 22 to 84 months. **METHODS AND MAIN OUTCOME MEASURES:** The patients from one group could be exactly matched for the main prognostic factors (type of cholesteatoma, ossicular status, and preoperative auditory status) with the patients from the other group. Auditory results were defined according to the Committee on Hearing and Equilibrium Guidelines. A one way analysis of variance was used to determine group differences. A probability value of $p < 0.05$ was the level of significance selected. **RESULTS:** All of the patients in the two groups were cholesteatoma free at the last follow-up, and significantly better hearing results were observed in the osteoplasty group. **CONCLUSIONS:** The osteoplasty with temporary removal of the posterior and attic canal wall is a useful adjunct to tympanoplasty in cholesteatoma cases as far as the hearing results and recurrence rates are concerned. This method combines the functional advantages of canal wall up operations with the safety yielded by canal wall down procedures.

Safety of the erbium:yttrium-aluminium-garnet laser in stapes surgery in otosclerosis. Keck, T., Wiebe, M., Rettinger, G., Riechelmann, H. Department of Otorhinolaryngology, University of Ulm, Ulm, Germany. tilman.keck@medizin.uni-ulm.de. *Otology & Neurology* (2002) January, Vol. 23 (1), pp. 21–4.

OBJECTIVE: The purpose of this study was to present early and

late bone-conduction hearing thresholds and data about cochlear and vestibular disturbances in patients after erbium:yttrium-aluminium-garnet (Er:YAG) laser stapedotomy in otosclerosis. **STUDY DESIGN:** The study design was a retrospective study. **SETTING:** The study was conducted at an academic tertiary referral center. **PATIENTS:** In this study, audiologic data of 117 patients undergoing Er:YAG laser-assisted stapedotomy for otosclerosis between 1993 and 1999 were included. **MAIN OUTCOME MEASURES:** The preoperative minus two postoperative (early, one to three days; late, at least six weeks) average pure-tone bone-conduction thresholds at 1, 2 and 4 kHz and 0.5, 1, 2 and 3 kHz were calculated. The postoperative appearance of nystagmus, vertigo, and tinnitus was analysed. **RESULTS:** A total of 91 of 117 patients showed unchanged preoperative minus postoperative pure-tone bone-conduction averages at 1, 2 and 4 kHz in the late postoperative measurement. A slight deterioration was observed in eight of 117 patients. Regarding the frequencies 0.5, 1, 2 and 3 kHz, 97 of 117 patients showed unchanged preoperative minus postoperative pure-tone bone-conduction averages. A new transient tinnitus appeared in 37 of 117 patients, and a new persistent tinnitus was found in three of 117 patients. Most of the patients had no postoperative dizziness (63/117 patients) and no postoperative nystagmus (109/117 patients). **CONCLUSION:** The study did not show significant sensorineural hearing loss at or below 3 kHz. Vestibular and cochlear function has no clinically relevant suppression after Er:YAG laser stapedotomy.

Vestibular nerve sectioning for intractable vertigo: efficacy of simplified retrosigmoid approach. Fukuhara, T., Silverman, D. A., Hughes, G. B., Kinney, S. E., Newman, C. W., Sandridge, S. A., Lee, J. H. Department of Neurological Surgery, The Cleveland Clinic Foundation, Cleveland, Ohio 44195, USA. *Otolaryngology and Neurology* (2002) January, Vol. 23 (1), pp. 67–72.

OBJECTIVE: To determine the surgical efficacy of a simplified retrosigmoid approach for vestibular nerve sectioning. **STUDY DESIGN:** A retrospective analysis. **SETTING:** Tertiary academic referral center. **PATIENTS:** Twenty-eight consecutive patients who underwent vestibular nerve sectioning for intractable peripheral vestibular disorders. **INTERVENTION:** All patients had a simplified retrosigmoid approach for vestibular nerve sectioning. **MAIN OUTCOME MEASURES:** Functional outcome after vestibular nerve sectioning was analysed with respect to improvement in patient disability from vertigo and reduction in the frequency of definitive vertigo attacks. Resolution of light-headedness provided an additional outcome measure. The incidence of surgical complications, including postoperative headache, was determined, and the operative time was reviewed. **RESULTS:** Twenty-six patients (92.9 per cent) had an improved functional level postoperatively, 21 (75 per cent) had excellent improvement, four (14.3 per cent) had significant improvement, one (3.6 per cent) had limited improvement, and two (7.1 per cent) had no change. No patient was worse postoperatively. Eighteen of 23 Ménière's patients (78.3 per cent) had complete control of definitive vertigo attacks after vestibular nerve sectioning. Improvement in lightheadedness was seen in 23 patients (82.1 per cent), 11 (39.3 per cent) of whom reported complete resolution. Postoperative headache developed in one (3.6 per cent) patient. No patients experienced infection, facial weakness, or leakage of cerebrospinal fluid. Mild hearing deterioration was seen in two patients (7.1 per cent). The mean operative time was 76.3 minutes. **CONCLUSION:** With excellent efficacy, short operative time, and a low incidence of postoperative hearing loss or headache, this simplified retrosigmoid technique should be considered for vestibular nerve sectioning in patients with intractable peripheral vestibular disorders.

Effectiveness of the particle repositioning maneuver in benign paroxysmal positional vertigo with and without additional vestibular pathology. Pollak, L., Davies, R. A., Luxon, L. L. Department of Neuro-Otology, The National Hospital for Neurology and Neurosurgery, Queen Square, London, England, UK. *Otology and Neurology* (2002) January, Vol. 23 (1), pp. 79–83.

OBJECTIVE: We compared the treatment outcome of patients with benign paroxysmal positional vertigo associated with additional objective evidence of vestibular pathology (BPPV) with that in patients who did demonstrate additional vestibular pathology

on standard neurotologic testing (BPPV+). **STUDY DESIGN:** An open, retrospective, record-based study. **SETTING:** Specialized outpatient dizziness clinic. **PATIENTS AND METHODS:** We reviewed 58 unselected patients with a Dix-Hallpike test demonstrating positioning nystagmus characteristic of BPPV, who were treated during the past four years with the particle repositioning maneuver. Before treatment, all patients underwent detailed clinical and laboratory neurotological testing. **MAIN OUTCOME MEASURES:** The treatment outcome was assessed with regard to persistence of symptoms and the presence of positioning nystagmus on Dix-Hallpike testing. **RESULTS:** Seventy-eight per cent of patients with BPPV no longer demonstrated characteristic positional nystagmus after one particle repositioning maneuver compared with 71 per cent of patients with BPPV+ ($p = 0.56$) who did, whereas 13 per cent of the BPPV and 14 per cent of the BPPV+ group required more than one treatment to be rendered nystagmus negative on Dix-Hallpike testing ($p = 0.89$). However, 14 per cent of patients with BPPV

remained dizzy, compared with 63 per cent patients from the BPPV+ group, despite a negative Dix-Hallpike test after treatment ($p = 0.0018$). Patients with horizontal canal paresis ($n = 15$) had a better outcome than patients with central vestibular dysfunction ($n = 7$, $p = 0.006$). Etiologic factors seemed to affect outcome—patients with idiopathic BPPV and those with a preceding acute vestibular neuronitis had a tendency for a better outcome than BPPV patients with any other etiology ($p = 0.058$). **CONCLUSION:** Our study demonstrates that patients with BPPV+ do not have a worse prognosis with respect to resolution of positional nystagmus, on performing the particle repositioning procedure, compared with patients with uncomplicated BPPV. However, they do suffer incomplete resolution of symptoms because of a coincidental anterior or horizontal canal dysfunction and otolithic or central vestibular dysfunction. It appears that the majority of patients with BPPV+ need further vestibular rehabilitation after the particle repositioning maneuver.