

## Abstract Selection

**Endolymphatic sac tumor (low-grade papillary adenocarcinoma) of the temporal bone.** Devaney Kenneth O, Ferlito Alfio, Rinaldo Alessandra. Department of Pathology, Foote Hospital, Jackson, Michigan, USA. *Acta oto-laryngologica* (2003) Dec, Vol. 123 (9), pp. 1022-6, Refs: 47, ISSN: 0001-6489. English.

The entity which has come to be known as an endolymphatic sac tumour (ELST) has, in the past, been known as adenocarcinoma of endolymphatic sac origin, aggressive papillary tumour of the temporal bone and Heffner's tumour. ELSTs arise in the vicinity of the inner ear and may extend to involve both the posterior fossa as well as the middle ear and the external ear canal, which may complicate the differential diagnosis. ELSTs are typically seen in adults, with only rare descriptions in paediatric patients. They may be sporadic tumours or they may arise as part of the symptom complex of von Hippel-Lindau disease. Clinical signs at presentation range from a mass in the external ear canal to sensorineural deafness to cranial nerve palsies. Imaging studies reveal a destructive lesion of the petrous bone which is heterogeneous on MR scanning. Light microscopy reveals two chief patterns: a follicular pattern, reminiscent of thyroid parenchyma, and a papillary/solid pattern. Both patterns are often admixed in the same tumour, and the individual tumour cells are cytologically bland. Immunohistochemically, ELSTs are typically keratin-, vimentin- and epithelial membrane antigen-positive; they are often S-100 protein-positive and neuron-specific enolase-positive as well. ELSTs are difficult to extirpate surgically (owing to their locally aggressive nature); nevertheless, surgical excision remains the mainstay of current therapy. These are slow-growing (albeit locally aggressive) tumours which have only rarely been reported to metastasize; as such, they remain principally a problem of local control.

**Otolith dysfunction during vertiginous attacks in Ménière's disease.** Oku Ryota, Shigeno Kohichiro, Kumagami Hidetaka, Takahashi Haruo. Department of Otolaryngology, Head and Neck Surgery, University of Nagasaki, Nagasaki, Japan. *Acta Oto-Laryngologica* (2003) Dec, Vol. 123 (9), pp. 1035-9, ISSN 0001-6489. English.

**OBJECTIVE:** Vertiginous attacks of Ménière's disease (MD) are characterized by various types of vertigo, namely rotatory vertigo, dizziness and drop attack. When a patient complains of dizziness without spontaneous nystagmus, otolith dysfunction cannot be ruled out. The purpose of this study was to evaluate otolith dysfunction during vertiginous attacks of MD or delayed endolymphatic hydrops. **MATERIAL AND METHODS:** Vestibular function tests were carried out daily for several days in 11 patients (MD, n = 9; delayed endolymphatic hydrops, n = 2) during vertiginous attacks. Otolith function was evaluated by means of the static torsional position of both eyes (static ocular torsion (OT)) whilst in an upright position. We defined otolith dysfunction as an abnormal change (range) in OT without spontaneous nystagmus or as an abnormal change in OT without a change in spontaneous nystagmus. **RESULTS:** Four patients had an abnormal change (range) in OT without spontaneous nystagmus or an abnormal change in OT without a change in spontaneous nystagmus during vertiginous attacks of MD. **CONCLUSIONS:** Otolith dysfunction occurs in patients during vertiginous attacks of MD. In cases of ataxia without spontaneous nystagmus, otolith dysfunction most likely causes atypical attacks of MD.

**Effect of botulinum toxin type A on nasal symptoms in patients with allergic rhinitis: a double-blind, placebo-controlled clinical trial.** Unal Murat, Sevim Serhan, Dogu Okan, Vayisoglu Yusuf, Kanik Arzu. Department of Otorhinolaryngology, Mersin University School of Medicine, Mersin, Turkey. muunal@hotmail.com *Acta Oto-Laryngologica* (2003) Dec, Vol. 123(9), pp. 1060-3, ISSN 0001-6489. English.

**OBJECTIVE:** To investigate the possible beneficial effects of botulinum toxin type A (BTX-A) on nasal symptoms in patients with allergic rhinitis (AR). **MATERIAL AND METHODS:** Thirty-four patients (21 females, 13 males, mean age 28 years) were included in the study. AR was diagnosed by means of history, clinical examination and skin prick test. Patients were randomly divided into three subgroups as follows: in Group A, 20 units of BTX-A was injected into each nasal cavity (total 40 units); in Group B, 30 units of BTX-A was injected into each nasal cavity (total 60 units); and in Group C, 2 ml of isotonic saline was injected as placebo. The symptoms of AR (rhinorrhoea, nasal obstruction, sneezing, itching) were scored by the patient on a six-point scale (from 0 to 5). All of the patients were followed up at weeks 1, 2, 4, 6 and 8; at each visit an anterior rhinoscopic examination was done and symptom scores were recorded. **RESULTS:** There was no statistically significant difference between Groups A and B in terms of average symptom scores. Rhinorrhoea, nasal obstruction and sneezing scores in Groups A and B were significantly better than those in Group C at all time points. Although itching scores were significantly lower at Weeks 1 and 2, there was no difference in the Week 4, 6 and 8 scores in Groups A and B. When total symptom scores were evaluated, the results for Groups A and B were similar but significantly better than those for Group C. **CONCLUSION:** In selected cases, injection of 40 units of BTX-A into the turbinates, as a single agent, may help the symptomatic control of AR for up to eight weeks.

**Effects of loratadine on red wine-induced symptoms and signs of rhinitis.** Andersson Morgan, Persson Carl G A, Svensson Christer, Cervin Hoberg Charlotte, Greiff Lennart. Department of Otorhinolaryngology, University Hospital, Lund, Sweden. morgan.andersson@onh.lu.se *Acta Oto-Laryngologica* (2003) Dec, Vol. 123 (9), pp. 1087-93, ISSN: 0001-6489. English.

**OBJECTIVE:** Intake of red wine may produce nasal symptoms. Little is known about the pathophysiology and pharmacology of this condition. The aim of this study was to examine whether nasal symptoms produced by red wine are reproducible, associated with mucinous secretion or plasma exudation and affected by antihistamine treatment. **MATERIAL AND METHODS:** Twenty-eight subjects with a history of nasal symptoms associated with red wine intake received oral challenges with red wine and raspberry juice in a crossover design. Nasal symptoms and peak inspiratory flow (PIF) were assessed. Nasal lavages were performed and levels of fucose and alpha2-macroglobulin were determined as indices of mucinous secretion and plasma exudation, respectively. Twelve responders (according to preset criteria) were re-challenged one hour after loratadine (10 mg) treatment, in a double-blind, placebo-controlled crossover design. Nasal symptoms and PIF were reassessed. Nasal lavages were performed and levels of fucose were redetermined. **RESULTS:** Red wine intake produced nasal symptoms ( $p < 0.05$ ) and decreased nasal PIF ( $p < 0.01-0.05$ ). A total of 54 per cent of subjects were categorized as responders, and in this group red wine produced a slight increase in lavage fluid levels of fucose ( $p < 0.05$ ). In contrast, levels of alpha2-macroglobulin were unaffected. A total of 83 per cent of responders developed symptoms at re-challenge. Loratadine reduced post-challenge nasal secretion ( $p < 0.05$ ). Also, red wine failed to reduce nasal PIF in patients receiving loratadine. **CONCLUSION:** Nasal symptoms associated with red wine intake can be reproduced by oral red wine challenges. This symptomatology may be associated with mucinous secretion, but not with plasma exudation. Loratadine may partially reduce nasal symptoms associated with intake of red wine.

### Videostrobokymographic analysis of benign vocal fold lesions.

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**OBJECTIVES:** Videostrobokymography (VSK) has recently been introduced. The aim of this study was to analyze vibratory patterns and objective parameters in various benign vocal fold lesions using VSK and to examine the efficacy of VSK in clinical applications. **MATERIAL AND METHODS:** Using VSK, we analyzed the vibration patterns of normal vocal folds, various benign lesions such as nodules, polyps, cysts and Reinke's oedema and cases of unilateral vocal fold paralysis. We also calculated the objective parameters open quotient and asymmetric index and compared them with their mean values in normal controls. **RESULTS:** In nodules, polyps and cysts, the open quotient at the site of the lesion was similar to the mean value in the normal controls; however, on the other parts of the vocal folds, it was much larger than the normal mean value. In Reinke's oedema, irregular and asymmetric vibrations were observed. The posterior area of the vocal folds showed larger open quotients than the anterior area. In unilateral vocal fold paralysis, irregular vocal fold vibration and incomplete closure of the vocal folds were documented. Much larger asymmetric indices were calculated for unilateral vocal fold paralysis than in normal controls or for other lesions. The asymmetric index may be a good quantitative parameter of vibration in patients with vocal fold paralysis. **CONCLUSION:** This study demonstrated that VSK could generate clear quantitative documentation of fine vibrations of vocal folds in many different types of benign lesion. VSK has the potential to be an effective tool for the quantitative analysis of vibratory patterns of vocal folds in clinical settings.

### Hearing improvement in patients with Fabry disease treated with agalsidase alfa.

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**AIM:** To describe the nature and prevalence of hearing loss in Fabry disease, and its response to enzyme replacement therapy (ERT) with agalsidase alfa. **METHODS:** Fifteen male patients with Fabry disease were enrolled in a randomized, double-blind study and received placebo (n = 8) or ERT (n = 7) with agalsidase alfa for six months. This was followed by an open-label extension of 36 months thus far. Alongside this trial, an additional eight men and two women have so far received open-label ERT for between six and 30 months. Pure-tone audiometry, impedance audiometry and otoacoustic emission testing were performed at 0 (baseline), 6, 18, 30 and 42 months. **RESULTS:** Nine patients (36 per cent) had bilateral and 10 (40 per cent) had unilateral high-frequency sensorineural hearing loss (SNHL). Three (12 per cent) had unilateral, middle-ear effusions with conductive losses persisting beyond six months. Only five patients (20 per cent) had normal hearing. The high-frequency SNHL deteriorated over the first six months in both placebo and active treatment groups by a median 6.3 dB ( $p < 0.0001$ , Wilcoxon matched-pairs). This hearing loss subsequently improved above baseline by 1.5 dB at 18 months ( $p = 0.07$ ), by 5.0 dB at 30 months ( $p = 0.006$ ) and by 4.0 dB at 42 months ( $p = 0.01$ ). **CONCLUSION:** Significant hearing loss, usually high-frequency SNHL, is a common manifestation of Fabry disease in adults. Alpha-galactosidase A replacement therapy with agalsidase alfa appears to reverse the hearing deterioration in these patients. This improvement, however, is gradual, suggesting the need for long-term ERT.

### Speech-language and educational consequences of unilateral hearing loss in children.

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**BACKGROUND:** In the past, unilateral hearing loss (UHL) in children was thought to have little consequence because speech and language presumably developed appropriately with one normal-hearing ear. Some studies from the 1980s and 1990s have

suggested that a significantly increased proportion of children with UHL may have educational and/or behavioral problems, compared with their normal-hearing peers. Limited data exist about the effect of UHL on acquisition of speech and language skills. **OBJECTIVE:** To review the current literature about the impact UHL has on the development of speech and language and educational achievement. **DATA SOURCE:** MEDLINE search between 1966 and June 1, 2003, using the medical subject heading 'hearing loss', combined with the textword 'unilateral'. **STUDY SELECTION:** Studies were limited to those written in English, reporting speech-language and/or educational results in children. **DATA EXTRACTION:** Articles were read with attention to study design, population, recruitment of subjects, and outcomes measured. **DATA SYNTHESIS:** Problems in school included a 22 per cent to 35 per cent rate of repeating at least one grade, and 12 per cent to 41 per cent receiving additional educational assistance. Speech and language delays have been reported in some but not all studies. **CONCLUSIONS:** School-age children with UHL appear to have increased rates of grade failures, need for additional educational assistance, and perceived behavioral issues in the classroom. Speech and language delays may occur in some children with UHL, but it is unclear if children 'catch up' as they grow older. Research into this area is necessary to clarify these issues and to determine whether interventions may prevent potential problems.

### Auditory brainstem implantation in 12- to 18-year-olds.

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**OBJECTIVE:** To assess the effects of the side of implantation (first-side vs second-side vestibular schwannoma); the presence of nonauditory sensations; the general health, expectations, and motivation of the patients; and a support group on the use of a multichannel auditory brainstem implant (ABI) in 12- to 18-year-old patients with neurofibromatosis 2. **DESIGN:** Since 1992, 21 individuals (age range, 12-18 years) who were deafened by neurofibromatosis 2 have undergone implantation with a multichannel ABI at the House Ear Institute, Los Angeles, Calif. The patients were categorized regarding side of implantation, presence of remaining hearing (in first-side implant recipients), incidence of non-auditory sensations, and ABI use or nonuse. They were also rated on factors of general health, personal motivation, expectations, and family support. **RESULTS:** Nineteen (95 per cent) of 20 teenagers tested received hearing sensations from their ABIs. Eleven teenagers used their ABIs regularly, but eight did not. Of the nonusers, two had good remaining hearing on the side with the second vestibular schwannoma, two had persistent non-auditory sensations, and four became programme dropouts. None of the dropouts had remaining hearing, significant non-auditory sensations, or poor health; however, they generally rated poorly in terms of personal motivation, expectations, and family support. One patient with good family support returned with excellent ABI results after four years' absence. **CONCLUSIONS:** The multichannel ABI is an effective means of providing hearing sensations to young patients deafened by neurofibromatosis 2. Pre-operative counselling regarding the importance of such factors as expectations, personal motivation, and family support is invaluable and can promote successful adaptation to the device. With patience and support, even young nonusers (including programme dropouts) can become successful device users.

### Intra-arterial induction high-dose chemotherapy with cisplatin for oral and oropharyngeal cancer: long-term results.

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Intra-arterial (IA) chemotherapy for curative treatment of head and neck cancer experienced a revival in the last decade. Mainly, it was used in concurrent combination with radiation in organ-preserving settings. The modern method of transfemoral approach for catheterization, superselective perfusion of the tumour-feeding vessel, and high-dose (150 mg x m(-2)) administration of cisplatin with parallel systemic neutralization with sodium thiosulphate (9 g x m(-2)) made pre-operative usage feasible. The

present paper presents the results of a pilot study on a population of 52 patients with resectable stage 1-4 carcinomas of the oral cavity and the oropharynx, who were treated with one cycle of pre-operative IA chemotherapy executed as mentioned above and radical surgery. There have been no interventional complications of IA chemotherapy, and acute side effects have been low. One tracheotomy had to be carried out due to swelling. The overall clinical local response has been 69 per cent. There was no interference with surgery, which was carried out three to four weeks later. Pathological complete remission was assessed in 25 per cent. The mean observation time was three years. A three-year overall and disease-free survival was 82 and 69 per cent, respectively, and at five years 77 and 59 per cent, respectively. Survival results were compared to a treatment-dependent prognosis index for the same population. As a conclusion, it can be stated that IA high-dose chemotherapy with cisplatin and systemic neutralisation in a neoadjuvant setting should be considered a feasible, safe, and effective treatment modality for resectable oral and oropharyngeal cancer. The low toxicity of this local chemotherapy recommends usage especially in stage 1-2 patients. The potential of survival benefit as indicated by the comparison to the prognosis index should be controlled in a randomised study.

**Tubed flap interpolation in reconstruction of helical and ear lobe defects.** Di Mascio Donatello, Castagnetti Fabio. Department of Surgery, Plastic Surgery and Burn Unit, Via Garibaldi 46/ter, 43030 Basilicanova, Parma, Italy, dimdo@libero.it *Dermatologic Surgery* (2004) Apr, Vol. 30 (4 Pt 1), pp. 572-8. ISSN: 1076-0512. English.

**BACKGROUND:** A useful reconstructive tool, as a delayed method, for marginal defects of the ear of more than 2.5 cm wide with no deficit of the cartilaginous frame and low scapha involvement, consists of tubed flaps raised from neighbouring areas. The patients treated with this technique sustained a dog bite in three cases, a human bite in one case, a motorcycle accident in one case, and finally, a burn trauma in two cases. **OBJECTIVE:** Three different cases of acquired marginal defects, namely ascending superior helix, descending helix, and cauda elicis with lobule involvement, are shown. **METHODS:** In the helix reconstruction, the tube width has not to be more than 15 mm, and the tube length has to be 1 cm longer than the defect. There was no conditioning of the flaps. No pedicle bridge was interposed along the major tube. The interval between two divisions was on average approximately five weeks. **RESULTS:** Seven patients were treated with this technique: In all cases, we had no infections or skin necrosis. To avoid a shrinkage of the tube, a correct ratio between flap dimensions and helical defect has to be estimated. **CONCLUSION:** Although it is considered an old technique and it is a multistage reconstructive sequence, this procedure could be the first preference in cases of marginal defects more than 2.5 cm wide. This is because it restores naturally the anatomy of the helix.

**EMLA and ear surgery: is it possible to achieve full-thickness anaesthesia with EMLA?** Sarifakioglu Nedim, Terzioglu Ahmet, Cigsar Buelent, Aslan Guercan. Ankara Training and Research Hospital, Plastic and Reconstructive Surgery Department, Ankara, Turkey, nsarifakioglu@yahoo.com *Dermatologic Surgery* (2004) Mar, Vol. 30 (3) pp. 395-8. ISSN: 1076-0512. English.

**BACKGROUND:** Topical local anaesthetic applications offer painless, effective analgesia with slow onset but prolonged duration and minimal side-effects. EMLA (Eczacibasi Pharmaceuticals, Istanbul, Turkey) is the most universally used topical local anaesthetic. **OBJECTIVE:** The aim of this prospective, randomized, double-blind study is to evaluate the efficacy of EMLA on total anaesthesia of the external ear. **METHODS:** Twenty-two patients with helical lesions were divided into two groups. Group A received EMLA on both the anterior and posterior surfaces of the ear, and group B received EMLA on only one side of the ear. After 120 minutes of occlusive dressing, the surgery was performed. The short form of the McGill Pain Questionnaire and a numerical visual analog scale were used to measure overall pain quality and intensity during and at the end of surgery. **RESULTS:** Visual analog scale scores (four for group A and six for group B) between two groups using Student's *t*-test ( $p = 0.210$ ) and concerning McGill Pain Questionnaire scores with Wilcoxon signed ranks test ( $p = 0.058$ ) between two groups showed no statistical significant difference. **CONCLUSION:** It

seems that EMLA cream is not a good and first option for achieving full anaesthesia on the ear because of its poor anaesthetic effect. We do not consider EMLA cream to be clinically useful for major surgical attempt on the ear.

**Single-stage surgical repair of benign laryngotracheal stenosis in adults.** van den Boogert Jolanda, Hans Hoeve L J, Struijs Ard, Hagenouw Rene R P M, Bogers Ad J J C. Department of Cardiothoracic Surgery, Erasmus MC, Dr Molewaterplein 40, 3015GD Rotterdam, The Netherlands, boogert.vandenm@12move.nl *Head & Neck* (2004) Feb, Vol. 26(2), pp. 111-7, ISSN: 1043-3074. English.

**BACKGROUND:** Benign laryngotracheal stenosis causes considerable morbidity. In a retrospective study, we describe the results of our surgical treatment. **METHODS:** Between June 1999 and June 2002, 14 adults with laryngotracheal stenosis were referred to our hospital. Stenosis resulted from mechanical ventilation in 11 patients, from Wegener's granulomatosis in two patients, and from strangulation in one patient. Eleven patients had a tracheotomy. One patient was found unfit for surgery. Nine patients underwent cricotracheal resection (CTR) with end-to-end anastomosis, and four patients underwent single-stage laryngotracheoplasty (SS-LTP) without stenting. **RESULTS:** There were no peri-operative deaths. Patients were extubated after mean of three days (range, 0-10 days; CTR 2.3 days vs SS-LTP 3.5 days,  $p = .45$ ). There were in-hospital complications in five patients. Mean hospital stay was 19 days (range, 8-53 days; after CTR 24 days vs SS-LTP 9 days,  $p = .015$ ). With regard to airway patency and voice recovery, 10 patients (77 per cent) had good results, including one patient with two readmissions, and three (23 per cent) had satisfactory results, including one patient with 11 additional nonsurgical interventions. **CONCLUSIONS:** Benign laryngotracheal stenosis in the adult patient can be repaired successfully using a strategy of two single-stage surgical procedures. All patients had good or satisfactory functional results. A multidisciplinary approach was essential to achieve these good results. Copyright 2004 Wiley Periodicals, Inc. *Head Neck* 26: 111-117, 2004.

**Tailored endoscopic surgery for the treatment of sinonasal inverted papilloma.** Lee Ta Jen, Huang Shiang Fu, Huang Chi Che. Department of Otolaryngology, Chang Gung Memorial Hospital, Chang Gung University, No 199, Tung-Hwa N Road, Taipei 105, Taiwan. *Head & Neck* (2004) Feb, Vol. 26(2), pp. 145-53, ISSN 1043-3074. English.

**BACKGROUND:** This retrospective study was designed to evaluate the efficacy of tailored endoscopic surgery. Tailored endoscopic surgery aims at resecting the inverted papilloma completely with a customized surgical approach, especially when an en-bloc excision cannot be comprehensively or routinely achieved because of the immense extent of the tumour. **METHODS:** Between November 1991 and March 2002, 43 patients with sinonasal inverted papillomas were treated by tailored endoscopic surgery. The average duration of follow-up for this population was 25.3 months (range, 9-150 months). A staging system developed by Krouse was adopted for tumour grading. On the basis of tailored endoscopic surgery, 15 localized lesions and 12 smaller extensive lesions (Krouse stages 1 and 2) were treated by ordinary endoscopic resection, whereas 16 larger extensive lesions (Krouse stages 3 and 4) in which the tumours were immense and subjected to sequential segmental endoscopic surgery (SSES). Seven of these 16 larger extensive lesions combined with endoscopic medial maxillectomy because of extensive encroachment of maxillary sinus antrum. **RESULTS:** Four patients (9.3 per cent) had residual disease, each requiring one revision surgery. All tumours were successfully resected. No patient required lateral rhinotomy or midfacial degloving procedure. No major complications were encountered in any of the patients. None of the patients had residual disease at the time of this writing. **CONCLUSIONS:** Tailored endoscopic surgery is a safe and effective treatment that obviates the need for more extensive surgery for the management of inverted papilloma. Proper pre-operative evaluations, intra-operative determination of extent and attachment of the tumour, close endoscopic follow-up, and expert application of endoscopic techniques are the keys to the successful use of tailored endoscopic surgery. Copyright 2004 Wiley Periodicals, Inc *Head Neck* 26 145-153, 2004.

**The changing face of malignant (necrotizing) external otitis clinical, radiological, and anatomic correlations.** Rubin Grandis Jennifer, Branstetter Barton F 4th, Yu Victor L. Department of Otolaryngology, University of Pittsburgh School of Medicine, PA, USA. *The Lancet Infectious Diseases* (2004) Jan, Vol. 4 (1), pp. 34-9, Refs 61, ISSN 1473-3099.

Malignant (necrotizing) external otitis is an invasive infection of the external auditory canal. Although elderly patients with diabetes remain the population most commonly affected, immunosuppressed individuals (eg, from HIV infection, chemotherapy, etc) are also susceptible to malignant external otitis. *Pseudomonas aeruginosa* is isolated from the aural drainage in more than 90 per cent of cases. The pathophysiology is incompletely understood although aural water exposure (eg, irrigation for cerumen impaction) has been reported as a potential latrogenic factor. The typical patient presents with exquisitely painful otorrhoea. If untreated, cranial neuropathies (most commonly of the facial nerve) can develop due to subtemporal extension of the infection. The diagnosis of malignant external otitis is based on a combination of clinical findings, an increased erythrocyte sedimentation rate, and radiographic evidence of soft tissue with or without bone erosion in the external canal and infratemporal fossa. Treatment consists of prolonged administration (six to eight weeks) of an antipseudomonal agent (typically an orally administered quinolone). With the introduction and widespread use of both oral and topical quinolones, there are reports of less severe presentation of malignant external otitis and even the emergence of ciprofloxacin resistance. Reservation of systemic quinolones for the treatment of invasive ear infections is recommended.

**Esthesioneuroblastoma: endoscopic nasal and anterior craniotomy resection.** Devaiah Anand K, Larsen Chnstopher, Tawfik Ossama, O Boynick Paul, Hoover Larry A. Department of Otolaryngology-Head and Neck Surgery, Boston Medical Center and Boston University School of Medicine, 88 East Newton, D616 Collamore, Boston, MA02118, USA ananddevaiah@bmc.org *The Laryngoscope* (2003) Dec, Vol. 113 (12), pp. 2086-90, ISSN 0023-852X.

**OBJECTIVES/HYPOTHESIS:** The objective was to illustrate the use of endoscopic techniques as an evolving surgical modality in excision of esthesioneuroblastoma. The authors advocate this method with excision with anterior craniotomy for removal of cribriform plate or anterior cranial fossa tumour extension. **STUDY DESIGN:** A retrospective chart review of patients with esthesioneuroblastoma treated surgically at a tertiary care institution from 1991 to 2002 using this surgical paradigm. **METHODS:** Patients were excluded for nonsurgical treatment or nasal and sinus tumour excision by nonendoscopic techniques. Patient demographics, tumour histological findings, presenting signs and symptoms, staging (Kadish and Dulguerov), post-operative complications, adjunct therapy, and recurrence were examined. **RESULTS:** Seven of 13 patients with esthesioneuroblastoma met all inclusion criteria. The average patient age was 47 years, with a male-to-female distribution of four to three. Patients were grouped by tumour stage using Kadish (stages A, B, and C included three, one, and three patients, respectively) and Dulguerov (stages T1, T2, and T4 included three, two, and two patients, respectively) methods. Average follow-up was 62.3 months. All patients had an endoscopic excision of the nasal and sinus component with anterior craniotomy. The most common post-operative complication was temporary mental status change, which was seen in two patients. There were no post-operative deaths. All patients received radiation therapy, and one also received chemotherapy. Two of the seven patients had recurrences. At last follow-up, six patients had no evidence of disease and one was alive with disease. **CONCLUSION:** Endoscopic excision of the nasal and sinus component with anterior craniotomy for cribriform or anterior cranial fossa extension is an effective treatment of esthesioneuroblastoma.

**Topical ciprofloxacin/dexamethasone is superior to ciprofloxacin alone in pediatric patients with acute otitis media and otorrhea through tympanostomy tubes.** Roland Peter S, Anon Jack B, Moe Richard D, Conroy Peter J, Wall G Michael, Dupre Sheryl J, Krueger Kimberly A, Potts Susan, Hogg Gail, Stroman David W. Department of Otolaryngology, University of Texas Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, TX 75390-

9035, USA Peter Roland@UTSouthwestern.edu *The Laryngoscope* (2003) Dec, Vol. 113(12), pp. 2116-22, ISSN 0023-852X.

**OBJECTIVE:** To determine whether topical administration of a corticosteroid improves resolution of acute tympanostomy tube otorrhea when combined with topical antibiotic drops. **STUDY DESIGN:** Randomized, patient-masked, parallel-group, multicenter trial of topical otic ciprofloxacin/dexamethasone versus topical ciprofloxacin alone in 201 children aged six months to 12 years with acute otitis media with tympanostomy tubes (AOMT) of less than or equal to three weeks' duration and visible otorrhea. **METHODS:** Eligible patients were randomized to receive three drops of either ciprofloxacin 0.3 per cent, dexamethasone 0.1 per cent or ciprofloxacin 0.3 per cent into the affected ear or ears twice daily for seven days. Clinical signs and symptoms of AOMT were evaluated on days 1 (baseline), 3, 8 (end-of-therapy), and 14 (test-of-cure), and twice-daily assessments of otorrhea were recorded in patient diaries. **RESULTS:** The mean time to cessation of otorrhea in the microbiologically culture-positive patient population (n = 167) was significantly shorter with topical ciprofloxacin/dexamethasone than with ciprofloxacin alone (4.22 vs 5.31 days,  $p = .004$ ). This resulted in significantly better clinical responses on days 3 and 8 ( $p < .0001$  and  $p = .0499$ , respectively). However, there were no significant differences between the two treatment groups in either the clinical response or the microbial eradication rate by day 14. **CONCLUSIONS:** Topical otic treatment with ciprofloxacin/dexamethasone is superior to treatment with ciprofloxacin alone and results in a faster clinical resolution in children with AOMT. The contribution of the corticosteroid in achieving a 20 per cent reduction (1.1 day) in time to cessation of otorrhea is clinically meaningful and represents an important advance over single-agent antibiotic therapy.

**Results of Caldwell-Luc after failed endoscopic middle meatus anastomy in patients with chronic sinusitis.** Cutler Jeffrey L, Duncavage James A, Matheny Keith, Cross Jenny L, Miman Murat C, Oh Charles-K. Department of Otolaryngology-Head and Neck Surgery, Vanderbilt University Medical Center, 1301 22nd Avenue South, Suite 2900, Nashville, TN 37222-5555, USA. Jeff.cutler@vanderbilt.edu *The Laryngoscope* (2003) Dec, Vol. 113 (12), pp. 2148-50, ISSN: 0023-852X.

**OBJECTIVES/HYPOTHESIS:** The Caldwell-Luc operation for treatment of medically refractory chronic maxillary sinusitis has largely been replaced by functional endoscopic sinus surgery. Despite this change, the Caldwell-Luc procedure still has well documented indications including treatment of both failed endoscopic middle meatus anastomy and irreversible mucosal changes. The purpose of the study was to review the authors' experience and results of Caldwell-Luc procedure after failed endoscopic middle meatus anastomy in patients clinically deemed to have irreversible mucosal changes. **STUDY DESIGN:** Retrospective review of pre-operative and post-operative results of patients who underwent Caldwell-Luc procedure for refractory chronic maxillary sinusitis after failed endoscopic middle meatus anastomy. **METHODS:** The pre-operative and post-operative clinical course of patients treated with Caldwell-Luc procedure performed by a single surgeon between 1996 and 2001 were reviewed. Only patients with a history of chronic sinusitis after failed maximal medical therapy, no prior Caldwell-Luc procedure, prior endoscopic middle meatus anastomy, and at least six months of follow-up were included. Outcome measurements including documented endoscopic examinations and the need for repeat surgery, and post-operative computed tomography scan results were evaluated to assess treatment success. **RESULTS:** The study involved 11 men and 26 women who underwent 50 Caldwell-Luc procedures. Caldwell-Luc procedure was performed bilaterally in 13 patients. The average number of prior endoscopic middle meatus anastomies before Caldwell-Luc procedure was two. Of all patients, 92 per cent responded to surgical treatment as demonstrated by an endoscopic examination or computed tomography scan revealing a disease-free maxillary sinus. Repeat Caldwell-Luc procedure was required in 8.0 per cent (n = 3) because of continued sinusitis. Two of the three cases with repeat Caldwell-Luc procedures demonstrated clinical improvement during follow-up. Average follow-up was 23.5 months. **CONCLUSION:** Caldwell-Luc procedure seems to be highly effective in the management of medically refractory chronic

sinusitis after failed endoscopic middle meatus antrotomy. Caldwell-Luc procedure should remain in the otolaryngologist's surgical repertoire for these selected cases.

**Endonasal surgery for contact point headaches: a 10-year longitudinal study.** Welge Luessen Antje, Hauser Rolf, Schmid Nevenka, Kappos Ludwig, Probst Rudolf. Department of Otorhinolaryngology, University of Basel, Kantonsspital, Petersgraben 4, CH-4031 Basel, Switzerland, awelge@uhbs.ch *The Laryngoscope* (2003) Dec, Vol. 113 (12), pp. 2151-6, ISSN: 0023-852X.

**OBJECTIVE:** Some migraine and cluster headaches may be triggered by stimulation of intranasal contact points via the trigeminovascular system. Endonasal surgery is successful in some patients, but long-term outcomes have not been reported. **STUDY DESIGN:** Prospective. **METHODS:** This investigation included 20 patients with a mean 18-year history of refractory cluster or migraine headaches who were selected for surgery. All had endoscopically visible endonasal contact as well as a positive pre-operative cocaine test result. Changes in pain severity and frequency and duration of headache attacks were statistically rated using a MANOVA. Follow-up averaged 112 months. **RESULTS:** Almost 10 years after surgery, six patients remained completely free of pain, seven had significant symptom improvement, and seven received no benefit from surgery (65 per cent improvement). Two patients had been free of all symptoms for seven and eight years, respectively, before complaints returned. **CONCLUSION:** Our data suggest that some patients with refractory headaches and endonasal contact areas benefit from surgery, thereby supporting the existence of a connection between the two. Even though it is clear that surgery should be considered only if all other treatments have failed, a success rate of 65 per cent over almost 10 years justifies evaluation of this option. Pre-operative patient selection remains crucial and warrants further investigation.

**Distribution of collagen in the lamina propria of the human vocal fold.** Madruga de Melo Erich Christiano, Lemos Miriam, Aragao Ximenes Filho Joao, Sennes Luiz Ubirajara, Nascimento Saldiva Paulo Hilario, Tsuji Domingos Hiroshi. Department of Otolaryngology, University of Sao Paulo School of Medicine, Sao Paulo, Brazil, erichmelo@uol.com.br *The Laryngoscope* (2003) Dec, Vol. 113 (12), pp. 2187-91, ISSN: 0023-852X.

**OBJECTIVES:** To describe the arrangement of collagen fibres in the lamina propria of the human vocal fold. **STUDY DESIGN:** Analysis of the lamina propria of the vocal fold obtained from human cadavers. **METHODS:** The Picrosirius-polarization method was used to visualize collagen fibres. **RESULTS:** Analysis of 20 human vocal folds by the Picrosirius-polarization method permitted the visualization of two fibre populations arranged in three layers in the lamina propria: two layers of thick, strongly birefringent collagen fibres (collagen type I), one immediately below the epithelium and another more dense layer in the deep region superficially to the vocal muscle, penetrating between muscle fibres. The third layer consisted of fine, weakly birefringent fibres (collagen type III) located between the two layers of thick fibres. In addition, the collagen fibres in the lamina propria showed an intertwined network arrangement in the form of a 'wicker basket'. **CONCLUSIONS:** This basket-like configuration better explains how the vocal fold is able to stretch even though it contains nonstretchable fibres and to modulate the frequency of the voice under the action of the intrinsic musculature of the larynx. Segmental areas of disarray of the basket-like structure of the collagen layers were systematically observed in older patients. Thus, it is possible that vocal alterations occurring in the elderly might be the result of a loss of histoarchitectural arrangement of the collagen system and its relationship with the lamina propria and underlying musculature.

**Bilateral bone-anchored hearing aids (BAHAs): an audiometric evaluation.** Priwin Claudia, Stenfelt Stefan, Granstroem Goesta, Tjellstroem Anders, Haakansson Bo. Department of Otorhinolaryngology, Head and Neck Surgery, Goeteborg University, Gothenburg, Sweden, claudia.priwin@ks.se *The Laryngoscope* (2004) Jan, Vol. 114 (1), pp. 77-84, ISSN: 0023-852X. **OBJECTIVES:** Since the technique to implant bone-anchored hearing aids (BAHAs) with the use of osseointegrated implants was developed in 1977, more than 15,000 patients have been fitted

with BAHAs worldwide. Although the majority have bilateral hearing loss, they are primarily fitted unilaterally. The main objective of this study was to reveal benefits and drawbacks of bilateral fitting of BAHAs in patients with symmetric or slight asymmetric bone-conduction thresholds. The possible effects were divided into three categories: hearing thresholds, directional hearing, and binaural hearing. **STUDY DESIGN:** Prospective study of 12 patients with bilateral BAHAs. **METHODS:** Baseline audiometry, directional hearing, speech reception thresholds in quiet and in noise, and binaural masking level difference were tested when BAHAs were fitted unilaterally and bilaterally. **RESULTS:** Eleven of the 12 patients used bilateral BAHAs on a daily basis. Tests performed in the study show a significant improvement in sound localization with bilateral BAHAs; the results with unilateral fitting were close to the chance level. Furthermore, with bilateral application, the improvement of the speech reception threshold in quiet was 5.4 dB. An improvement with bilateral fitting was also found for speech reception in noise. **CONCLUSIONS:** Overall, the results with bilateral fitted BAHAs were better than with unilaterally fitted BAHA; the benefit is not only caused simply by bilateral stimulation but also, to some extent, by binaural hearing. Bilateral BAHAs should be considered for patients with bilateral hearing loss otherwise suitable for BAHAs.

**Submucous cleft palate: a grading system and review of 40 consecutive submucous cleft palate repairs.** Sommerlad Brian C, Fenn Christopher, Harland Kim, Sell Debbie, Birch Malcolm J, Dave Rupa, Lees Melissa, Barnett Adrian. Great Ormond Street Hospital for Children, London, United Kingdom. brian@sommerlad.co.uk *The Cleft Palate-Craniofacial Journal* (2004) Mar, Vol. 41 (2), pp. 114-23, ISSN: 1055-6656.

**OBJECTIVES:** This study was designed to determine whether velar surgery was worthwhile for submucous cleft palate (SMCP) and evaluate whether results were dependent on the degree of the anatomical abnormality. **DESIGN:** A prospective study of a consecutive series of patients fulfilling the entry criteria, assessed blindly from records arranged randomly. **PATIENTS:** Fifty-eight patients diagnosed with SMCP and operated on by a single surgeon between June 1991 and April 1997 were reviewed. Forty patients fulfilled the entry criteria. Minimum follow-up was six years. **INTERVENTION:** Radical reconstruction of the soft palate musculature was performed by one surgeon using the operating microscope. A scoring system was devised for grading the anatomical severity of submucous cleft (SMCP score). **MAIN OUTCOME MEASURES:** Post-operative hypernasality and nasal emission scores and the degrees of improvement were considered the primary outcome measures, and the degree of velopharyngeal closure was also assessed. **RESULTS:** There were highly significant improvements in hypernasality, nasal emission, and velopharyngeal closure. A pre-operative gap size of more than 13 mm was associated with less satisfactory outcomes, but gap size was not predictive of improvement. Severity of the SMCP did not correlate with the degree of pre-operative speech abnormality but was a significant predictor of outcome of surgery, with the less severe (total SMCP score of 0 to 3) having less satisfactory end results and lesser degrees of improvement. Patients with less abnormal muscle anatomy had lesser degrees of improvement. **CONCLUSION:** Repair of the muscle abnormality in SMCP is recommended as the first line of treatment in most cases.

**Experience of incorporating a mental health service into patient care after operations for cancers of the head and neck.** Wood Steve, Bisson Jonathan I. Cardiff & Vale NHS Trust, Whitchurch Hospital, Whitchurch, Cardiff CF14 7XB, Wales, UK. *The British Journal of Oral & Maxillofacial Surgery* (2004) Apr, Vol. 42 (2), pp. 149-54, ISSN: 0266-4356.

The psychological needs of patients with cancer have been increasingly recognized. Those with cancers of the head and neck have previously been found to be at relatively high risk of developing mental health difficulties after diagnosis and treatment. To provide for their psychological needs a mental health liaison nurse was attached to the local maxillofacial surgery unit for a trial period of 18 months. Fifty-eight different patients out of a total possible 63 were seen on a total of 102 occasions. The main difficulties encountered were issues of adjustment. Ten patients required brief intervention and treatment as inpatients,

and only two required treatment as outpatients. Most interventions were psychological and facilitated the normal adjustment process. Given the appreciable degree of psychopathology, we advocate a stepped care approach to deal with patients' mental health needs. Initial assessment, information, and support would be provided by ward-based staff with appropriate training and supervision. Patients who were identified as having more complex needs would be seen by a mental health liaison specialist.

**Stapes surgery in osteogenesis imperfecta in Finland.** Kuurila Kaija, Pynnoenen Seppo, Grenman Reidar. Department of Otorhinolaryngology-Head and Neck Surgery, Vaasa Central Hospital, Vaasa, Finland. *The Annals of Otolaryngology, Rhinology, and Laryngology* (2004) Mar, Vol. 113 (3 Pt 1), pp. 187-93, Refs: 37, ISSN: 0003-4894.

We present the surgical findings and audiometric results of ear surgery performed between 1961 and 2002 on 33 Finnish patients (43 operations) with osteogenesis imperfecta (OI). The mean age at the time of the first operation was 30.1 years. The typical surgical findings were a thick, fixed, or obliterated footplate, thick and vascular mucosa with an excessive tendency to bleed, and elastic, fractured, or atrophic stapes crura. As compared with previous studies, the hearing gain was poorer and the remaining post-operative gap was greater for the 43 operations analyzed. The results of this nationwide study, however, may not be directly comparable with operative results of non-population studies. On the other hand, the hearing gain in our study was better in university hospitals than in central hospitals and, furthermore, was comparable with that of previous studies after surgery performed by a single surgeon in a university hospital. Conductive hearing loss related to OI may be successfully treated with surgery in most patients. The rarity of the disease, leading to small annual numbers of operations, the variable surgical findings, and the profuse bleeding tendency of the middle ear, as well as the audiometric results in this study, support centralization of ear surgery in OI patients.

**Laser eustachian tuboplasty.** Kujawski Oskar B, Poe Dennis S. International ENT Center, Clinique des Grangettes, Geneva, Eustachian Tube Disorders Center, Clinique des Grangettes, Geneva, Switzerland. kujawski@eustachian-tube.com *Otology & Neurotology* (2004) Jan, Vol. 25 (1), pp. 1-8, ISSN: 1531-7129.

**OBJECTIVES:** Surgery on the eustachian tube for chronic eustachian tube dysfunction has been previously directed toward the bony isthmus and failed to produce lasting results. Dynamic video analysis demonstrates pathophysiology in the tubal cartilaginous portion. This study investigated a new endoluminal procedure that focused on the cartilaginous eustachian tube. **STUDY DESIGN:** Prospective surgical trial. **SETTING:** Tertiary care private practice and outpatient surgical center. **PATIENTS:** One hundred and eight eustachian tubes with intractable eustachian tube dysfunction (middle ear atelectasis or effusion) in 56 patients underwent laser eustachian tuboplasty by the first author (O. B. K.) since 1997. **INTERVENTION:** Dynamic video analyses of eustachian tube function were performed perioperatively. Laser eustachian tuboplasties were performed unilaterally or bilaterally under general anaesthesia through a combined endoscopic nasal and transoral approach to the eustachian tube nasopharyngeal orifice. Carbon dioxide or 980-nm diode laser vaporization of mucosa and cartilage from the luminal posterior wall was accomplished until adequately dilation was achieved and the tube was packed. A laser myringotomy for temporary middle-ear aeration while the eustachian tube was packed was also performed during surgery. **MAIN OUTCOME MEASURES:** There were two outcome measures: 1) the presence or absence of middle-ear effusion or tympanic membrane atelectasis and 2) impedance tympanometry. In addition, dynamic videos were examined to rate the degree of visible opening of the tubal valve and effects on mucosal oedema and muscular movements. **RESULTS:** Seventy-four (68.51 per cent) ears achieved normal middle-ear aeration at one year, 70 (71.42 per cent) at 2 years, and 60 (65.21 per cent) at greater than or equal to three years. There were no intra-operative complications. Post-operative complications were limited to minimal peritubal synechia in nine (8.33 per cent) tubes and epistaxis in one (0.9 per cent) tubes. Seven (6.48 per cent) ears failed treatment and required tympanostomy tubes. **CONCLUSION:** Laser eustachian tuboplasty is a new procedure that has demonstrated early

promise in correcting intractable eustachian tube dysfunction with few complications. Further studies will be necessary to reproduce the results and establish the role of laser eustachian tuboplasty in the management of chronic intractable eustachian tube dysfunction.

**Eustachian tube gland changes in acute otitis media.** Caye Thomassen Per, Tos Mirko. Department of Oto-Rhino-Laryngology, Head and Neck Surgery, Gentofte University Hospital of Copenhagen, Hellerup, Denmark, percaye@dadlnet.dk *Otology & Neurotology* (2004) Jan, Vol. 25 (1), pp. 14-8, ISSN: 1531-7129.

**OBJECTIVES:** To investigate the histomorphological impact of acute otitis media on the subepithelial glands of the eustachian tube. Previous investigations have shown an increase of eustachian tube goblet cell density during and up to at least six months after acute otitis media. **STUDY DESIGN:** Longitudinal study in an experimental animal model of acute otitis media caused by *Streptococcus pneumoniae*. **METHODS:** Bacterial middle-ear challenge, after which the animals were killed, in groups of five rats on Days 4, 8, 16, 90, and 180. Dissection and preparation of the eustachian tube and adjacent structures, followed by serial transverse sectioning, periodic acid-Schiff/alcan blue staining, and qualitative/quantitative morphometric light-microscopic investigations of the histomorphology of the eustachian tube glands, in particular, the stainability, composition, volume, and number of gland acini. **RESULTS:** The volume of the eustachian tube glands progressed to peak 16 days after inoculation, followed by a gradual normalization. The volume was still increased three months after the acute infection but completely normalized after six months. The increase was primarily due to hypertrophy of the mucous gland components, as the serous gland component volume and number of gland acini was unchanged. The periodic acid-Schiff/alcan blue staining of the mucous gland acini changed temporarily during the acute infection, indicating changes in mucus glycoprotein composition, from neutral to acidic/sulfated. **CONCLUSION:** The volume of the eustachian tube glands increases during and up to at least three months after acute otitis media, primarily because of hypertrophy of the mucous gland components. This may compromise tubal ventilatory and drainage function.

**Progressive auditory neuropathy in patients with Leber's hereditary optic neuropathy.** Ceranic B, Luxon L M. Department of Neuro-otology, Box 127, The National Hospital for Neurology and Neurosurgery, Queen Square, London WC1 3BG, UK. borka.ceranic@uclh.org *Journal of Neurology, Neurosurgery, and Psychiatry* (2004) Apr, Vol. 75 (4), pp. 626-30, ISSN: 0022-3050.

**OBJECTIVE:** To investigate auditory neural involvement in patients with Leber's hereditary optic neuropathy (LHON). **METHODS:** Auditory assessment was undertaken in two patients with LHON. One was a 45-year-old woman with Harding disease (multiple-sclerosis-like illness and positive 11778mtDNA mutation) and mild auditory symptoms, whose auditory function was monitored over five years. The other was a 59-year-old man with positive 11778mtDNA mutation, who presented with a long-standing progressive bilateral hearing loss, moderate on one side and severe to profound on the other. Standard pure tone audiometry, tympanometry, stapedial reflex threshold measurements, stapedial reflex decay, otoacoustic emissions with olivocochlear suppression, auditory brain stem responses, and vestibular function tests were undertaken. **RESULTS:** Both patients had good cochlear function, as judged by otoacoustic emissions (intact outer hair cells) and normal stapedial reflexes (intact inner hair cells). A brain stem lesion was excluded by negative findings on imaging, recordable stapedial reflex thresholds, and, in one of the patients, olivocochlear suppression of otoacoustic emissions. The deterioration of auditory function implied a progressive course in both cases. Vestibular function was unaffected. **CONCLUSIONS:** The findings are consistent with auditory neuropathy—a lesion of the cochlear nerve presenting with abnormal auditory brain stem responses and with normal inner hair cells and the cochlear nucleus (lower brain stem). The association of auditory neuropathy, or any other auditory dysfunction, with LHON has not been recognized previously. Further studies are necessary to establish whether this is a consistent finding.