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Abstract Selection

The role of agger nasi air cells in patients requiring revision endoscopic frontal sinus surgery. Bradley, D. T., Kountakis, S. E. Department of Otolaryngology, University of Virginia, Charlottesville, USA. *Otolaryngology – Head and Neck Surgery* (2004) Oct, Vol.131 (4), pp. 525–7, ISSN 0194-5998.
OBJECTIVES: To determine the association of agger nasi air cell disease with frontal rhinosinusitis, assessed by computed tomography (CT), in patients who require revision functional endoscopic sinus surgery (FESS). METHODS: We prospectively collected data on patients undergoing revision FESS at a tertiary care medical center over an 18-month period. Sinus CT scans were graded as per Lund-Mackay. Frontal sinus findings on CT scan were correlated with the presence or absence of disease in agger nasi air cells. RESULTS: Eighty patients underwent revision FESS in an 18-month period. A total of 160 sides were evaluated by sinus CT scan with agger nasi being present in all but 11 sides (93%). One patient did not have a pneumatized frontal sinus on 1 side and so 148 sides were available for study. Frontal sinus disease was present in 119 and absent in 29 sides. The average CT grade of patients with frontal rhinosinusitis was 8.4 while it was only 3.0 in patients without frontal rhinosinusitis ($P = 0.000$). Agger nasi air cell disease was present in only 3 of 29 (10%) sides in patients without frontal rhinosinusitis and was present in all 119 (100%) sides of patients with frontal rhinosinusitis ($P = 0.0000$). CONCLUSION: Agger nasi air cells are a common anatomic feature, present in 93% of our patients. Agger nasi air cell disease correlates strongly with frontal sinus disease as assessed by sinus CT scan in patients undergoing revision FESS. In addition, frontal sinus disease correlates with the severity of overall sinus disease as determined by sinus CT scan.

Small and large middle meatus antrostomies in the treatment of chronic maxillary sinusitis. Albu, S., Tomescu, E. Department of Otolaryngology, University of Medicine and Pharmacy Cluj, Romania. s_albu@hotmail.com *Otolaryngology – Head and Neck Surgery* (2004) Oct, Vol.131 (4), pp. 542–7, ISSN 0194-5998.
OBJECTIVE: The study goal was to compare the postoperative endoscopic appearance of the middle meatus antrostomy with symptomatic relief in patients undergoing endoscopic endonasal sinus surgery for chronic maxillary sinusitis. STUDY DESIGN: We conducted a prospective randomized study encompassing 133 patients with chronic rhinogenic maxillary sinusitis who underwent endoscopic ethmoid surgery and middle meatal antrostomies. One of the tasks was to compare small-sized (less than 6 mm) antrostomies with large-sized (more than 16 mm) antrostomies in reliving the symptoms of chronic maxillary sinusitis. During follow-up an attempt was made to correlate endoscopic findings with symptomatic failure. RESULTS: We could not demonstrate a statistically significant correlation between the degree of improvement of the main sinusitis symptoms (obstruction, headache, and nasal discharge) and the postoperative size of the antrostomy. Nevertheless, persistent accessory maxillary ostia scarring within the ethmoid were statistically significant predictors of poor surgical outcome. CONCLUSION: We conclude from this study that the size of the middle meatal antrostomy has no influence on the outcome of endonasal surgery for chronic rhinogenic maxillary sinusitis.

Tumor volume in pharyngolaryngeal squamous cell carcinoma: comparison at CT, MR imaging, and FDG PET and validation with surgical specimen. Daisne, J. F., Duprez, T., Weynand, B., Lonneux, M., Hamoir, M., Reychler, H., Gregoire, V. Head and Neck Oncology Program, St-Luc University Hospital, Universite Catholique de Louvain, 10 Ave Hippocrate, 1200 Brussels, Belgium. *Radiology* (2004) Oct (epub: 2004 Aug 18), Vol.233 (1), pp. 93–100, ISSN 0033-8419.
PURPOSE: To compare computed tomography (CT), magnetic resonance (MR) imaging, and fluorine 18 fluorodeoxyglucose (FDG) positron emission tomography (PET) for delineation of gross tumor volume (GTV) in pharyngolaryngeal squamous cell carcinoma and to validate results with the macroscopic surgical specimen when available. MATERIALS AND METHODS: Twenty-nine patients with stages II-IV squamous cell carcinoma treated with radiation therapy or chemotherapy and radiation therapy (n = 20) or with total laryngectomy (n = 9) were enrolled. Ten patients had oropharyngeal, 13 had laryngeal, and six had hypopharyngeal tumors. CT, MR imaging, and PET were performed with patients immobilized in a customized thermoplastic mask, and images were coregistered. GTVs obtained with the three modalities were compared quantitatively and qualitatively. If patients underwent total laryngectomy, images were validated with the surgical specimen after three-dimensional coregistration. The effect of each modality was estimated with linear mixed-effects models. Adjustments for multiple comparisons were made with the Bonferonni or Sidak method. RESULTS: For oropharyngeal tumors and for laryngeal or hypopharyngeal tumors, no significant difference ($P > .99$) was observed between average GTVs delineated at CT (32.0 and 21.4 cm(3), respectively) or MR imaging (27.9 and 21.4 cm(3), respectively), whereas average GTVs at PET were smaller (20.3 ($P <1= .10$) and 16.4 cm(3) ($P <1= .01$), respectively). GTVs from surgical specimens were significantly smaller (12.6 cm(3), $P <1= .06$). In nine patients for whom a surgical specimen was available, no modality adequately depicted superficial tumor extension; this was due to limitations in spatial resolution. In addition, false-positive results were seen for cartilage, extralaryngeal, and pre-epiglottic extensions. CONCLUSION: Compared with GTVs at CT and MR imaging, GTVs at FOG PET were smaller. In nine patients for whom a surgical specimen was available, PET was found to be the most accurate modality. However, no modality managed to depict superficial tumor extension.

Mucormycosis—early diagnosis and treatment. Guevara, N., Roy, D., Dutruc, R. C., Santini, J., Hofman, P., Castillo, L. Hospital Pasteur, ENT Department, Surgery of the Face and Neck, 30 avenue de la Romaine, BP 69, F-06002 Nice 1, France. Nicolas.guevara@wanadoo.fr. *Revue de laryngologie -otologie - rhinologie* (2004), Vol.125 (2), pp. 127–31, ISSN 0035-1334.
OBJECTIVE: The aim of this retrospective study was to analyse the data of patients with rhino-orbital-cerebral mucormycosis for predisposing factors, diagnosis, treatment and survival rate. The role of frozen section in early diagnosis and use of nasal endoscopy in diagnosis, treatment and follow-up of patients has also been examined. DESIGN: Retrospective case series. SETTING: University Teaching Hospital. METHODS: The case notes of 9 patients with diagnosis of mucormycosis who presented from 1973 to 2001 were examined. The data for predisposing factors, signs/symptoms, histological diagnosis, radiological intervention, medical and surgical treatment and final outcome was analysed. RESULTS: There were 9 patients with mucormycoses. Early diagnosis was made by endoscopic examination and frozen section in 5 patients, which was later confirmed by histology. Treatment included parental and/or local amphotericin, hyperbaric oxygen and debridement either by endoscopic or external approach, with or without orbital exenteration. This resulted in an overall survival of 5 patients. CONCLUSION: Frozen section diagnosis allows for early therapy since successful treatment depends on systemic amphotericin, surgical debridement and treatment of underlying predisposing factors. Nasal endoscopy is useful in diagnosis, endoscopic debridement and follow up of patients.

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Splaying of the carotid bifurcation caused by a cervical sympathetic chain schwannoma. Wang, C. P., Hsiao, J. K., Ko, J.Y. Department of Otolaryngology, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, Taiwan. *The Annals of Otology, Rhinology, and Laryngology* (2004) Sep, Vol.113 (9), pp. 696–9, Refs: 13, ISSN 0003-4894.
Splaying of the carotid bifurcation revealed by an imaging study is usually indicative of a carotid body tumor, but there are other possibilities. To promote awareness of a cervical sympathetic chain schwannoma as another cause of splaying of the carotid bifurcation, we present a case of cervical sympathetic chain schwannoma, with an additional 7 cases in the English-language literature, and discuss the relationship between the great vessels of the neck and a carotid body tumor or a schwannoma of the cervical sympathetic chain or vagus nerve from an anatomic viewpoint. We conclude that splaying of the carotid bifurcation with hypervascularity suggests a carotid body tumor, whereas in cases without hypervascularity, a cervical sympathetic chain schwannoma is another possibility. Vagus nerve schwannomas can separate the internal jugular vein and internal carotid artery, but seldom widen the carotid bifurcation.

Horizontal canal benign positional vertigo. Hornibrook, J. Department of Otolaryngology-Head and Neck Surgery, Christchurch Hospital, Christchurch, New Zealand. *The Annals of Otology, Rhinology, and Laryngology* (2004) Sep, Vol.113 (9), pp. 721–5, ISSN 0003-4894.
The existence of horizontal canal benign positional vertigo (BPV) was predicted from temporal bone studies in 1973, but was not clinically confirmed until later. In this series of 300 patients with BPV, 35 (12%) were identified as having the horizontal canal variant. The essential features are the onset of vertigo when the patient assumes a supine position and bidirectional horizontal nystagmus as the head is turned from side to side. In one third it appeared as a canal "conversion" in patients undergoing repositioning treatment for posterior canal BPV. The mechanism can be canalithiasis or cupulolithiasis. Repositioning treatment is a 360 degrees horizontal head and body rotation that has a high success rate if the symptomatic ear is correctly identified.

Surface electromyographic activity in total laryngectomy patients following laryngeal nerve transfer to neck strap muscles. Heaton, J. T., Goldstein, E. A., Kobler, J. B., Zeitels, S. M., Randolph, G. W., Walsh, M. J., Gooey, J. E., Hillman, R. E. W. M. Keck Foundation Neural Prosthesis Research Center, Massachusetts Eye and Ear Infirmary, Boston, Massachusetts, USA. *The Annals of Otology, Rhinology, and Laryngology* (2004) Sep, Vol.113 (9), pp. 754–64, ISSN 0003-4894.
Hands-free triggering and pitch control would improve electrolarynx devices, which are inconvenient to use and sound unnatural. The present study tested the strategy of salvaging voice-related neural signals for hands-free electrolarynx control either by transferring cut recurrent laryngeal nerves (RLNs) to denervated neck strap muscles or by preserving strap muscles with their normal innervation. An RLN nerve transfer was performed at the time of total laryngectomy in 8 individuals, and in 5 of these subjects, strap muscles with intact ansa cervicalis innervation were also preserved for comparison. Neck surface electromyography performed over the strap muscles was used periodically for more than 1 year on phonatory and nonphonatory tasks. Signals were eventually obtained in all subjects from both RLN-innervated and ansa-innervated strap muscles that correlated with speech production. After 1 year, RLN-driven signals were larger than ansa-driven signals in magnitude, and their timing appeared better correlated with intended phonation. The results show that neck surface electromyography is an effective control source for hands-free electrolarynx activation, and that RLN transfer may provide the best approach for obtaining phonation-related activity.

Is nasal packing necessary following endoscopic sinus surgery? Orlandi, R. R., Lanza, D. C. Division of Otolaryngology-Head and Neck Surgery, University of Utah, Salt Lake City, Utah, USA. richard.orlandi@hsc.utah.edu. *The Laryngoscope* (2004) Sep, Vol.114 (9), pp. 1541–4, ISSN 0023-852X.
OBJECTIVES/HYPOTHESIS: To determine the necessity of nasal packing or hemostatic agents or both following endoscopic sinus surgery. STUDY DESIGN: Retrospective review of cases in a tertiary care sinus practice at an academic medical center. METHODS: Records of 165 patients undergoing 169 endoscopic sinus surgeries were reviewed to determine the presence of adjunctive nasal procedures, the use of nasal packing or hemostatic agents or both, blood loss during surgery, and the incidence of bleeding complications following surgery. RESULTS: The median estimated blood loss during surgery was 50.0 mL (range, 5–1000 mL). In four surgeries (2.4%) hemostatic agents were placed in the nose at the conclusion of surgery, 19 (11.2%) had packing, and 147 (87.0%) had no material left in the nose. No patients had bleeding complications postoperatively. There was a significant decrease in the use of packing or hemostatic agents or both over time. CONCLUSION: Placement of nasal packing or other hemostatic agents or both within the nasal cavity is not necessary in the majority of endoscopic sinus surgeries. The risks, costs, and discomforts associated with these interventions can often be avoided.

Development and validation of the voice handicap index-10. Rosen, C. A., Lee, A. S., Osborne, J., Zullo, T., Murry, T. Department of Otolaryngology-Head and Neck Surgery, University of Pittsburgh Voice Center, PA, USA. rosenca@upmc.edu. *The Laryngoscope* (2004) Sep, Vol.114 (9), pp. 1549–56, ISSN 0023-852X.
OBJECTIVES/HYPOTHESIS: The objective was to develop an abbreviated voice handicap assessment instrument and compare it with the Voice Handicap Index (VHI). STUDY DESIGN: Item analysis of the VHI in individuals without voice disorders and patients with voice disorders and creation and validation of the abbreviated VHI. METHODS: Clinical consensus review of the VHI items was held to prioritize the clinical value of each of the VHI items (30 items in all). Item analysis of the VHI was performed using the VHI responses of 100 patients with voice problems and 159 control subjects. The 10 most robust VHI items were selected using the item analysis and clinical consensus results to form the Voice Handicap Index-10 (VHI-10). Statistical analysis comparing the validity of the VHI-10 with the VHI was performed with 819 patients representing a wide spectrum of voice disorders. RESULTS: Statistical analysis of the VHI and VHI-10 scores from the study group showed no statistically significant differences between the VHI and the VHI-10. Irrespective of diagnosis, the correlation between the VHI and the VHI-10 was greater than .90 ($P = .01$). The ratios of the VHI-10 to VHI scores for a variety of voice disorder categories were analyzed and found to be consistently greater than the expected value (33%). This suggests that the VHI-10 may be a more robust instrument than the VHI. CONCLUSION: The VHI-10 is a powerful representation of the VHI that takes less time for the patient to complete without loss of validity. Thus, the VHI-10 can replace the VHI as an instrument to quantify patients' perception of their voice handicap.

Pachydermia is not diagnostic of active laryngopharyngeal reflux disease. Hill, R. K., Simpson, C. B., Velazquez, R., Larson, N. Department of Otolaryngology/Head and Neck Surgery, University of Texas Health Science Center, San Antonio, TX, USA. *The Laryngoscope* (2004) Sep, Vol.114 (9), pp. 1557–61, ISSN 0023-852X.
OBJECTIVE: To determine the change in pachydermia/posterior commissure hypertrophy in patients with laryngopharyngeal reflux disease (LPR) on long-term acid-suppressive therapy. STUDY DESIGN: Retrospective chart review. METHODS: Seventeen patients with LPR who were compliant with long-term acid-suppressive treatment and had good control of their symptoms for at least 20 months were examined. Pre- and post-treatment still laryngeal images from these patients were analyzed by five otolaryngologists blinded to patient information and were scored for pachydermia/posterior commissure hypertrophy according to the Reflux Finding Score (RFS) subset. Test-retest intraobserver reliability, intergrader correlations, as well as a paired t test for means of the data sets were then calculated. RESULTS: There was no significant difference in the grading scores between the pre- and post-treatment group for degree of pachydermia/posterior commissure hypertrophy despite a prolonged treatment interval (mean = 32 months) ($P = .25$). CONCLUSIONS: There is no statistically significant difference in the degree of pachydermia/posterior commissure hypertrophy found at diagnosis and after long-term acid suppressive therapy in patients with LPR. Therefore, it appears that pachydermia, as an isolated finding, is unreliable in determining the presence of active LPR.

Long-term results of type II thyroplasty for adductor spasmodic dysphonia. Chan, S. W., Baxter, M., Oates, J., Yorston, A. Royal Victorian Eye and Ear Hospital, Melbourne, Australia. *The*

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Laryngoscope (2004) Sep, Vol.114 (9), pp. 1604–8, ISSN 0023-852X.
OBJECTIVES: To assess the outcome of type II thyroplasty in the treatment of adductor spasmodic dysphonia (ASD). STUDY DESIGN: Prospective case series. METHODS: Thirteen patients with the diagnosis of ASD who were previously treated successfully with botulinum toxin therapy were recruited. Type II thyroplasty as described by Nobuhiko Isshiki was performed on all the patients. A self-rating assessment of the degree of severity and vocal effort were recorded and compared preoperatively and during postoperative follow-up. RESULTS: There were four early failures in our series, with two caused by friable thyroid cartilage. In the early postoperative period, after excluding the early failures, six (66.7%) and seven (77.8%) patients had moderate/good improvement in symptom severity and vocal effort, respectively. During the follow-up period, a further five patients had deterioration of voice quality and were classified as failures. Of these five patients, two patients had reversal of their procedure. At the end of the follow-up period (mean follow-up period of 12 months), six (66.7%) and five (55.5%) patients sustained improvement in symptom severity and vocal effort, respectively. However, only two (22.2%) and three (33.3%) patients had moderate/good improvements in symptom severity and vocal effort, respectively, after 12 months. CONCLUSIONS: Botulinum toxin injection remains the gold-standard treatment for ASD in our center. Potential patients for type II thyroplasty need to be carefully selected and counselled by a multidisciplinary team of otolaryngologists, neurologists, and speech pathologists.

Medicinal use of cocaine: a shifting paradigm over 25 years. Long, H., Greller, H., Mercurio, Z. M., Nelson, L. S., Hoffman, R. S. North Shore University Hospital, Manhasset, NY, USA. heather.long@mindspring.com. *The Laryngoscope* (2004) Sep, Vol.114 (9), pp. 1625–9, ISSN 0023-852X.
OBJECTIVES/HYPOTHESIS: Human cocaine research is predicated on data from the clinical practice of otolaryngology that are more than 25 years old and predate both the cocaine epidemic and the first reported association between cocaine use and myocardial infarction. The authors' objective was to reassess the epidemiology and toxicity of medicinal cocaine use among otolaryngologists and to compare current trends in usage and safety data with previously reported data. STUDY DESIGN: An anonymous closed-question survey replicating the methodology of a previous study was used. METHODS: The survey was mailed to active members of the American Academy of Otolaryngology-Head and Neck Surgery. The survey used a closed-question format asking about the use of cocaine, safety measures taken, and adverse outcomes and included information about practice type and location. Results were compared with previously published data using a chi test with $P < .05$ considered significant. RESULTS: In all, 7815 surveys were mailed. Four thousand and seventeen otolaryngologists returned the survey, representing a 54% response rate. Of the respondents, only 50% had used cocaine in their practice during the previous year. Physicians who had been in practice for less than 10 years were less likely to have used cocaine than those who had been in practice for more than 10 years (78% vs. 93% ($P < .001$)). Compared with the data reported in 1977, fewer physicians reported ever using cocaine in their practice (88% vs. 92% ($P < .001$)), fewer physicians had used cocaine in their practice at any time in the previous 10 years (68% vs. 92% ($P < .001$)), and a greater number of adverse reactions were reported by current respondents (26% vs. 22% ($P < .001$)). Tachycardia and hypertension were the most commonly reported adverse effects. Other important adverse events included 14 deaths, survivable cardiac arrest, ventricular tachycardia, and seizures. CONCLUSION: The clinical use of cocaine in otolaryngology has decreased significantly in the past 25 years as a result of discontinuation of use by physicians who had previously used cocaine and an increasing number of otolaryngologists who have never used it. This decline may reflect a better understanding of its potential toxicities, problems associated with storing and dispensing of a tightly controlled substance, increased availability of safer alternative medications, or a combination of these.

Serotonin reuptake inhibitors in auditory processing disorders in elderly patients: preliminary results. Cruz ,O. L. M., Kasse, C. A., Sanchez, M., Barbosa, F., Barros, F. A. Department of Otolaryngology, Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil. olacruz@uol.com.br. *The Laryngoscope* (2004) Sep, Vol.114 (9), pp. 1656–9, ISSN 0023-852X.
OBJECTIVE/HYPOTHESIS: One mechanism associated with degeneration in the elderly is the decrease of neurotransmitters. In the central auditory pathway serotonin, can be found from cochlear nucleus to the auditory cortex, and it constitutes one of the most important neuromodulatory circuits in hearing processing. The present study analyzed the action of citalopram, a selective inhibitor of serotonin reuptake, in aged patients with normal to moderate sensorineural hearing loss (HL) and low performance on auditory processing. STUDY DESIGN/METHOD: Prospective, double-blind, randomized, placebo-controlled study. Thirty-eight selected patients were randomly divided into two groups. Nineteen patients made up Group A and received placebo for 60 days. Nineteen patients of Group B received 20 mg per day of citalopram for 60 days. Hearing evaluation was performed initially and after 60 days and included pure-tone audiometry, speech discrimination test (SDT), emittanciometry (acoustic impedance audiometry), identification of synthetic sentences with an ipsilateral competitive message (SSI/ICM), tests of pitch-pattern sequences (PPS), and the staggered spondaic words test (SSW). RESULTS: Comparisons of tests of auditory processing pre- and post-treatment in each group showed a statistical improvement in performance on all tests in Group B after 2 months of therapy. Comparisons pre- and post-treatment between groups showed that patients who received citalopram presented statistically significantly better results in the SSI/ICM test ($P < .0001$) after treatment. The same comparison in results for the PPS test and the SSW test revealed a tendency ($P = .09$ and 0.058, respectively) toward better performance in the group receiving citalopram. CONCLUSION: These preliminary results suggest that the use of citalopram can have a positive impact on auditory processes in elderly patients with low performance in auditory process.

Changes in frequency and pathogens causing acute otitis media in 1995-2003. Casey, J. R., Pichichero, M. E. Elmwood Pediatric Group, Department of Pediatrics, University of Rochester, Rochester, NY, USA. *The Pediatric Infectious Disease Journal* (2004) Sep, Vol.23 (9), pp. 824–8, ISSN 0891-3668.
OBJECTIVE: This study was undertaken to determine whether a change in the frequency or distribution of the causative pathogens in persistent acute otitis media (AOM) and AOM treatment failure (AOMTF) occurred after publication of the Centers for Disease Control and Prevention AOM treatment guidelines advocating high dose amoxicillin in 1998 and the universal use of the pneumococcal conjugate vaccine in 2000. METHODS: This was a 9-year prospective study in a suburban, community-based private practice. To identify bacterial isolate(s), 551 children with AOM who had not responded after 1 or 2 empiric antimicrobial treatment courses (termed persistent AOM) and those who were failures after 48 h on treatment (AOMTF) underwent tympanocentesis. Three periods were compared: (1) 1995–1997 when all enrolled received standard dose amoxicillin (40-50 mg/kg/day divided 3 times daily) as the initial empiric treatment; (2) 1998–2000 when all received high dose amoxicillin (80-100 mg/kg/day divided twice daily); and (3) 2001–2003 when high dose amoxicillin and pneumococcal conjugate vaccinations were used. RESULTS: Persistent AOM or AOMTF for which tympanocentesis was performed occurred in 195 (16.2%) of 1,207, 204 (16.1%) of 1,278 and 152 (12.3%) of 1,232 AOM visits for 1995–1997, 1998–2000 and 2001–2003, respectively; the 24% decline in 2001–2003 in persistent AOM and AOMTF was significant ($P = 0.007$). Middle ear aspirates grew *Streptococcus pneumoniae* (48, 44 and 31%) and *Haemophilus influenzae* (38, 43 and 57%) for time periods 1, 2 and 3, respectively. There was a significant decline in *S. pneumoniae* ($P = 0.017$) and increase in *H. influenzae* ($P = 0.012$) isolations and of *H. influenzae* that were beta-lactamase-producing ($P = 0.04$) among middle ear fluid isolates. Also there was a trend for an increased proportion of *S. pneumoniae* in 2001–2003 that were penicillin-susceptible ($P = 0.17$). CONCLUSIONS: In our experience, persistent AOM and AOMTF has decreased in frequency since the introduction of high dose amoxicillin therapy and pneumococcal conjugate vaccination. It appears that *H. influenzae* has become the predominant pathogen of persistent AOM and AOMTF since universal immunization with the pneumococcal conjugate vaccine. Fewer *S. pneumoniae* AOM isolates are penicillin-resistant and more *H. influenzae* are beta-lactamase-producing.

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