

# EASTERN SECTION PROGRAM

FRIDAY, JANUARY 23, 2004

4:00 - Speaker Ready Room - Ballroom E Foyer  
8:00

6:00 - Registration - Ballroom E Foyer  
8:00

6:30 - Exhibit Hall Open - Ballrooms D and E  
8:00

6:30 - Welcome/President's Reception - Ballrooms D and E  
8:00

SATURDAY, JANUARY 24, 2004

7:00 - Registration - Ballroom E Foyer  
5:00

7:00 - Speaker Ready Room - Ballroom E Foyer  
5:00

7:00 - Business Meeting (Members Only) - Broadway  
7:50

7:00 - Poster Viewing - Foyer  
7:00

7:00 - Exhibit Hall Open - Ballrooms D and E  
4:00

7:00 - Continental Breakfast with Exhibitors - Ballrooms D and E  
7:50

8:00 - Scientific Session - Ballroom C  
5:00

8:00 Welcome and Introduction of Robert A. Jahrsdoerfer, MD\*, President  
Frank E. Lucente, MD\*, Brooklyn, NY

8:02 Presidential Address  
Robert A. Jahrsdoerfer, MD\*, Charlottesville, VA

8:12 Introduction of Guest of Honor, Stanley M. Blaugrund, MD\*, New York City, NY  
Frank E. Lucente, MD\*, Brooklyn, NY

8:14 Remarks of Guest of Honor, Stanley M. Blaugrund, MD\*, New York City, NY

8:22 Introduction of Special Guests  
Frank E. Lucente, MD\*, Brooklyn, NY

8:32 KEYNOTE ADDRESS: EARS, NOSE-TO-TOES—OUR COMMITMENT TO THE HUMAN BODY  
Donald O. Lyman, MD, Sacramento, CA

**MODERATORS: LANNY G. CLOSE, MD\*, NEW YORK, NY  
PATRICK J. GULLANE, MD\*, TORONTO, ON**

9:02 Tissue Microarray Analysis Reveals Prognostic Significance of COX-2 Expression for Local Relapse in T1-2N0 Larynx Cancer Treated with Primary Radiation Therapy  
Edward I. Cho, BA, New Haven, CT  
Diane P. Kowalski, MD, New Haven, CT  
Clarence T. Sasaki, MD\*, New Haven, CT  
Bruce G. Haffty, MD, New Haven, CT

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the prognostic significance of COX-2 expression for local relapse in early stage larynx cancer treated with radiation therapy.

**OBJECTIVES:** The purpose of this analysis is to elucidate a relationship between cyclooxygenase-2 (COX-2) expression and local relapse in a large cohort of patients with T1-2N0 larynx cancer treated with primary radiation therapy. **STUDY DESIGN:** Please see Methods. **METHODS:** Clinical and molecular analyses were conducted on 123 patients with biopsy-proven T1-2N0 larynx cancer. Clinical prognostic factors included pretreatment hemoglobin level, age, sex, race, T stage, tumor subsite, beam energy, biologically equivalent dosage, and therapy duration. Molecular prognostic factors included COX-2, p53, and Ki-67 expression. Expression levels were determined by immunohistochemistry on paraffin-embedded tissues arrayed on tissue microarrays. Multivariate analysis was done with the Cox proportional hazards model. **RESULTS:** Thirty-two patients have locally relapsed for an actuarial 5-year local relapse-free rate of 70.4%. On multivariate analysis, positive COX-2 expression predicted for local relapse after radiation therapy. The relative risk (RR) for local relapse with COX-2 positivity was 2.57 (95% confidence interval [CI] 1.21-5.47) (P=0.01). Other prognostic factors for local relapse included negative Ki-67 expression (RR=5.72 [CI] 2.04-16.1) (P<0.001), T2 stage (RR=2.98 [CI] 1.39-6.38) (P=0.005), and therapy duration greater than 43

days (RR=6.04 [CI] 1.37-26.7) (P=0.02). **CONCLUSIONS:** Positive COX-2 expression predicts for local relapse in T1-2N0 larynx cancer in a multivariate model. This relationship may have potential therapeutic implications regarding the use of COX-2 inhibitors during radiation therapy for optimal outcome.

#### 9:10 **Clinicopathological Factors Predicting Recurrence and Disease Specific Survival in Well Differentiated Thyroid Carcinoma: A Study of 574 Patients**

Sharon L. Cushing, MD, Toronto, ON Canada  
Carsten E. Palme, MB BS, Toronto, ON Canada (*Presenter*)  
Nathalie L. Audet, MD, Toronto, ON Canada  
Robert J. Hamilton, MD, Toronto, ON Canada  
Paul G. Walfish, MD, Toronto, ON Canada  
Jeremy L. Freeman, MD, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss prognostic factors in well differentiated thyroid carcinoma.

**OBJECTIVES:** To test the prognostic significance of standard clinicopathological factors in patients with well differentiated thyroid carcinoma (WDTC). **STUDY DESIGN:** Retrospective chart review at tertiary referral center. **METHODS:** A retrospective chart review of a thyroid cancer database (1963-2000) was carried out. All patients consecutively treated for WDTC were eligible for inclusion. Relevant patient, tumor, treatment and outcome data was collected. **RESULTS:** 574 patients (F=459 vs M=115) with a median age of 41 years were eligible for inclusion in this study (median F/U=7 years). The recurrence rate was 13% (72/574). The overall and disease specific survival at 20 years was 78% and 91% respectively. Clinicopathologic factors significant on multivariate regression for the development of disease recurrence included male gender, age > 60 years and advanced stage (all p<0.05). Similarly male gender, a positive family history for WDTC and advanced stage on presentation were associated with a worse disease specific survival on multivariate regression (all p<0.05). **CONCLUSIONS:** Well differentiated thyroid carcinoma is associated with a significant recurrence rate and good disease specific survival. The most important prognostic factors are male gender, age > 60 years, a positive family history and advanced initial stage of disease.

#### 9:18 **FIRST PRIZE - RESIDENT RESEARCH AWARD** **Elective Neck Dissection and Survival in Patients with Oral Cavity/Oropharyngeal Cancer**

Umamaheswar Duvvuri, MD PhD+, Pittsburgh, PA  
Alfred A. Simental, MD, Loma Linda, CA  
Gina D'Angelo, MS, Pittsburgh, PA  
Robert L. Ferris, MD PhD, Pittsburgh, PA  
Jonas T. Johnson, MD\*, Pittsburgh, PA  
Eugene N. Myers, MD\*, Pittsburgh, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the utility of elective neck dissection in the management of patients of oral cavity/oropharyngeal cancer without neck disease.

**OBJECTIVES:** Cancer of the oral cavity/oropharynx remains a major health concern, due to poor five year survival rates, from locoregional recurrence. This study evaluates the efficacy of elective neck dissection (END) when compared to clinical observation in patients with primary tumors of the oral cavity/oropharynx without evidence of cervical metastases. **STUDY DESIGN:** Retrospective chart review of patients treated at one institution. **METHODS:** 522 patients with oral cavity/oropharyngeal cancer were included in the study. Patients with prior head and neck cancer, prior treatment or less than 24 months follow-up were excluded (190). There were 332 available patients who were followed for 24 months or until death; 164 patients had the primary tumor excision and neck observation while 168 patients underwent END with primary tumor excision. Patients with T3 and T4 disease were only in the END group (N=23) and were excluded from the statistical analyses. Overall and disease-free survival and recurrence rates were determined. **RESULTS:** The local failure rate approximated 20%, irrespective of tumor stage or treatment. Regional recurrence was 27% (observed) versus 8% (END) for T1 disease, and 29% (observed) versus 12% (END) for T2 disease. Age was a statistically significant predictor for overall survival with the risk of death increasing with age. There were no predictors related to disease-free survival. **CONCLUSIONS:** Our findings suggest that END improves regional control for patients with oral cavity/oropharyngeal cancer. Survival rates did not differ significantly between treatment groups. END may provide critical clinical information that can be used to employ or avoid adjuvant therapy thereby reducing the need for subsequent retreatment, adjuvant therapy or more extensive salvage surgery.

#### 9:26 **DISCUSSION**

#### 9:34 **SECOND PRIZE (TIE) - RESIDENT RESEARCH AWARD** **The Changing Demographics of Head and Neck Squamous Cell Carcinoma in the US**

Andrew G. Sikora, MD PhD+, New York, NY  
Paolo Toniolo, MD MPH, New York, NY  
Mark D. Delacure, MD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to describe how the patient population diagnosed with head and neck squamous cell carcinoma (HNSCCA) has changed over the past 25 years and to explain how these changes are likely to alter the demands on the health care system made by HNSCCA patients.

**OBJECTIVES:** Head and neck squamous cell carcinoma (HNSCCA) has declined in the US over the past 20 years. During this time, substantial immigration from countries where HNSCCA is more common has occurred and the average lifespan has increased. We tested the hypothesis that these trends have altered the HNSCCA patient population. **STUDY DESIGN:** Retrospective analysis of population-based data from the SEER database, a national registry capturing roughly 10% of all US cancer diagnoses. **METHODS:** We examined all diagnoses of HNSCCA in the database from 1975-1999 and determined the distribution of new cases by age, sex, and race. **RESULTS:** HNSCCA diagnoses declined overall by 20% during this time, while new diagnoses in patients >74 years old rose by over 20%, due entirely to an increase in the number of women >74 years of age diagnosed with HNSCCA. The rate of HNSCCA per 100,000 person-years in elderly women did not change, suggesting that the growth in the number of cases is explained by an increase in the population of elderly women at risk. While both the absolute number of new cases and the incidence rates of HNSCCA in non-Hispanic white males declined precipitously, the percentage of HNSCCA patients classified as non-white or Hispanic nearly doubled, from 12% to over 21% of all cases. During this time, the absolute number of HNSCCA cases in non-whites and Hispanics grew by 50%. **CONCLUSIONS:** Increasing representation of elderly, non-whites, and Hispanics among patients with HNSCCA is likely to alter patterns of disease and utilization of health care resources.

#### 9:42 Fine Needle Aspiration Biopsy Suspicious for Papillary Thyroid Carcinoma: A Review of Cytopathological Criteria

Xerxes Punthakee, BSc, Toronto, ON Canada  
Carsten E. Palme, MB BS, Toronto, ON Canada (Presenter)  
Jason Franklin, MD, Toronto, ON Canada  
Irene Zhang, BSc, Toronto, ON Canada  
Yvan Bedard, MD, Toronto, ON Canada  
Jeremy L. Freeman, MD, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand and discuss the controversies pertaining to fine needle aspiration biopsy suspicious for papillary thyroid cancer.

**OBJECTIVES:** Evaluate the usefulness of standard suspicious cytological features on fine needle aspiration biopsy (FNAB) in predicting papillary thyroid carcinoma (PTC). **STUDY DESIGN:** Retrospective chart review at tertiary referral center. **METHODS:** Retrospective review of consecutive patients presenting with an FNAB suspicious (Group 1) or positive for PTC (Group 2). The frequency of standard cytological features (i.e. papillary architecture, multinucleated giant cell, pseudoinclusions, nuclear grooves, micronucleoli, powdery chromatin and psammoma bodies) were recorded for each group. These were compared using X2 test. Sensitivity and specificity for both individual and a combination of features were calculated in Group 1 patients. **RESULTS:** 108 patients were eligible for this study (Group 1=57, Group 2=51). All patients in Group 2 and 51 (89%) in Group 1 had a final diagnosis of PTC. The most frequent features present on FNAB in Group 1 vs Group 2 respectively were nuclear grooves (79% vs 88%), micronucleoli (74% vs 88%), pseudoinclusions (58% vs 88%) and powdery chromatin (47% vs 59%) ( $p>0.05$ ,  $p>0.05$ ,  $p<0.05^*$ ,  $p>0.05$ ). In Group 1, the sensitivity of nuclear grooves and micronucleoli was 80% and 71% respectively. The presence of psammoma bodies was associated with a specificity of 100%. A combination of nuclear grooves, micronucleoli, pseudoinclusions, powdery chromatin and multinucleated giant cells was 100% specific in detecting PTC. **CONCLUSIONS:** In choosing the most appropriate management of an FNAB suspicious for PTC, the surgeon needs to be aware of the diagnostic importance of certain cytopathological features. The presence of a combination of these factors may allow a more confident surgical approach (i.e. total thyroidectomy).

#### 9:50 Swallowing Outcomes After Head and Neck Cancer Treatment

M. Boyd Gillespie, MD, Charleston, SC  
Martin B. Brodsky, Charleston, SC  
Terry A. Day, MD, Charleston, SC  
Bonnie Martin-Harris, PhD, Charleston, SC

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to 1) discuss the effects of head and neck cancer treatment on swallowing function; and 2) recognize potential risk factors for post-treatment dysphagia.

**OBJECTIVES:** 1) Determine if swallowing outcome differs between treatment groups (chemoradiation v. surgery/radiation); and 2) identify potential risk factors for post-treatment dysphagia. **STUDY DESIGN:** Cross-sectional survey of advanced (Stage III/IV) head and neck cancer survivors. **METHODS:** Subjects were stratified by sex, age, tumor site, and tumor T-stage in order to achieve a balanced comparison between the chemoradiation (N=20) and surgery/radiation (N=20) groups. Outcome measures included a dysphagia risk factor survey, the MD Anderson Dysphagia Inventory (MDADI), and the Short-Form 36 (SF-36). **RESULTS:** No significant differences in swallowing outcome were detected when chemoradiation subjects were compared to surgery/radiation subjects ( $p=0.35$ ). The chemoradiation group demonstrated better scores on the functional domain of the MDADI which indicates greater ease with food preparation and eating in public. Potential risk factors for post-treatment dysphagia include low SF-36 mental health subscores ( $p=0.006$ ), prolonged ( $>2$  weeks) NPO status ( $p=0.02$ ), and reduced body mass index ( $p=0.03$ ). **CONCLUSIONS:** There is presently no evidence of a difference in swallowing outcome between chemoradiation and surgery/radiation patients. Patients with depressed mental health, nutritional deficiencies, and prolonged tube feedings may be at higher risk of long-term dysphagia. Identification and aggressive management of high-risk patients is recommended in order to improve swallowing outcome.

#### 9:58 DISCUSSION

#### 10:06 Break/Poster Presentations/Visit with Exhibitors - Ballrooms D and E

**MODERATORS: PEAK WOO, MD\*, NEW YORK, NY  
STANLEY M. SHAPSHAY, MD\*, BOSTON, MA**

#### 10:34 Hypopharyngeal Perforation Near-Miss During Transesophageal Echocardiography

Jonathan E. Aviv, MD\*, New York, NY  
Marco R. Di Tullio, MD, New York, NY  
Shunichi Homma, MD, New York, NY  
Ian S. Storper, MD, New York, NY  
Guoguang Ma, PhD, Lansdale, PA  
Eva Petkova, PhD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the likely reasons traditional, blind passage of a transesophageal echocardiography probe via the hypopharynx results in greater incidence of hypopharyngeal injury than transesophageal echocardiography probe passage under direct visualization.

**OBJECTIVES:** The traditional, blind passage of a transesophageal echocardiography (TE) probe transorally via the hypopharynx is considered safe. Yet, severe hypopharyngeal complications during TE at several institutions led us to investigate whether traditional probe passage results in a greater incidence of hypopharyngeal injuries when compared to probe passage under direct visualization. **STUDY DESIGN:** Prospective, randomized clinical trial. **METHODS:** In 159 consciously sedated adults referred for TE we performed concomitant transnasal video-endoscopic monitoring of the hypopharynx. Subjects were randomly assigned to traditional/blind or experimental/optical TE. The primary outcome measure was frequency of hypopharyngeal injuries (hypopharyngeal lacerations or hematomas) and the secondary outcome measure was number of hypopharyngeal contacts. **RESULTS:** No perforation occurred with either technique. However, hypopharyngeal lacerations or hematomas occurred in 19 of 80 (23.8%) patients with the traditional technique (11 pyriform sinus superficial lacerations, 1 pharynx laceration, 12 arytenoid hematomas, 2 vocal fold hematomas, 1 pyriform hematoma) and in 1 of 79 patients (1.3%) with the optical technique (superficial pyriform laceration) ( $p=0.001$ ). All traumatized patients underwent flexible laryngoscopy, but none required additional intervention. Hypopharyngeal contacts were more frequent with the traditional than with the optical technique at the pyriform sinus (70.0% vs. 10.1%;  $p=0.001$ ), arytenoid (55.0% vs. 3.8%;  $p=0.001$ ), and vocal fold (15.0% vs. 3.86%;  $p=0.016$ ). **CONCLUSIONS:** Optically-guided TE results in significantly fewer hypopharyngeal injuries and fewer contacts than traditional, blind TE. The optically-guided technique may result in decreased frequency of potentially significant complications, and therefore, in improved patient safety.

**10:42 Flexible Endoscopic Evaluation of Swallowing with Sensory Testing (FEESST) in Patients with Unilateral Vocal Fold Paresis: Incidence and Pathophysiology of Aspiration**

Abtin Tabaei, MD, New York, NY

Rosemary B. Desloge, MD FACS, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the incidence and pathophysiology of dysphagia in patients with unilateral vocal fold paresis as determined by FEESST evaluation.

**OBJECTIVES:** To determine the incidence and pathophysiology of dysphagia in patients with vocal fold paresis as determined by FEESST evaluation. **STUDY DESIGN:** Retrospective review of FEESST data and medical records in a tertiary medical care center. **METHODS:** The medical records and FEESST data of all patients who were noted to have unilateral vocal fold paresis between the years 2002 and 2003 were included for evaluation. **RESULTS:** 36 patients (19 male, 17 female) were included in the study. The mean age was 57 years. The most common etiologies for the vocal fold paresis were iatrogenic (42%), malignancy (22%) and neurologic (17%). The paresis was left sided in 58% of patients. A majority of the patients exhibited laryngeal edema/erythema (89%), difficulty with secretions (56%) and decreased laryngopharyngeal sensation (75%). The laryngeal adductor reflex was absent in 22%, all ipsilateral to the side of the paresis. 45% of patients aspirated with clear liquids. Trials of pureed consistencies revealed a 37% rate of spillage, 23% rate of penetration, 63% rate of pooling, 17% rate of aspiration. Rates of penetration and aspiration with pureed consistencies were higher in patients who had decreased laryngopharyngeal sensation (33% rate of penetration, 30% rate of aspiration) and absence of the laryngeal adductor reflex (penetration 38% rate of penetration, 38% rate of aspiration). **CONCLUSIONS:** Dysphagia must be considered in all patients with unilateral vocal fold paresis and the pathophysiology may be multifactorial with both decreased sensation and diminished airway protective mechanisms acting as contributing factors. FEESST provides the necessary information for dietary modifications. This may prevent aspiration and related sequelae.

**10:50 Factors Predictive of Patient Perception of Dysphonia**

Tina He, MD, New York, NY

Alison Behrman, PhD, New York, NY

Lucian Sulica, MD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to: 1) understand the role of assessing patient perception of dysphonia in diagnosis of benign vocal fold lesions; 2) identify factors that may potentially contribute to perception of dysphonia; and 3) discuss implications for future research in patient attitude and its role in treatment selection for benign vocal fold lesions.

**OBJECTIVES:** Patient perception of dysphonia, often assessed using the Voice Handicap Index (VHI), is a popular measure of treatment outcomes in voice disorders. Identification of factors contributing to patient perception may clarify patient expectation of treatment outcomes and help inform treatment decisions. Therefore, the purpose of this study is to assess select factors (demographic, health, voice use, acoustic) that may be predictive of VHI score. **STUDY DESIGN:** This is a case control study of 50 adult patients with benign mid-membranous vocal fold lesions (i.e., nodules, polyp, cyst, mid-membranous thickening) pre-treatment. **METHODS:** VHI score and the following potential predictive factors were assessed in all 50 subjects: age, gender, vocal demands, lesion type, duration of dysphonia, smoking, mucosal wave, phonatory glottal closure. Acoustic measures (jitter, shimmer, harmonic to noise ratio, long-term average spectrum) and perceptual vocal quality were assessed in a subset of 25 subjects. **RESULTS:** Initial data analyses reveal factors directly correlated with VHI score having statistical significance are: gender and absence of mucosal wave of at least one vocal fold. Factors having statistically significant inverse correlations with VHI are duration of dysphonia and smoking. **CONCLUSIONS:** In cases of benign vocal fold lesions, surgeons should not assume that severity of dysphonia and social or occupational vocal demands are the driving factors in patient perception of vocal handicap. Other factors, perhaps related to personality, may be of greater significance, and may ultimately influence treatment decision.

**11:00 DISCUSSION**

**11:08 PANEL: REHABILITATION IN HEAD AND NECK SURGERY**

**MODERATOR: Gady Har-El, MD\*, Brooklyn, NY**

**PANELISTS AND TOPICS:**

**Voice Restoration After Laryngeal Cancer Surgery**

Steven M. Zeitels, MD\*, Boston, MA

**Evaluation and Nonsurgical Rehabilitation After BOT and Supraglottic Surgery**

Jonathan E. Aviv, MD\*, New York, NY

**Rehabilitation of Vocal Cord Paralysis**

Dennis H. Kraus, MD, New York, NY

**Discussion and Q&A**

Gady Har-El, MD\*, Brooklyn, NY

**12:00 Lunch with Exhibitors - Ballrooms D and E**

**1:15 PANEL: OFFICE-BASED FACIAL PLASTIC SURGERY: A PRACTICAL APPROACH**

**MODERATOR: Jeffrey Ahn, MD, New York, NY**

**PANELISTS AND TOPICS:**

**Anesthetic Considerations in Office Based Cosmetic Surgery**

Robert A. Guida, MD, New York, NY

**Cosmetic Applications of Botox**

Steven Pearlman, MD, New York, NY

**Office-Based Dermabrasion**

Phillip J. Miller, MD, New York, NY

**Discussion and Q&A**

Jeffrey Ahn, MD, New York, NY

**MODERATORS: ROBERT M. KELLMAN, MD, SYRACUSE, NY  
STEVEN M. PARNES, MD\*, ALBANY, NY**

**2:00 The Creation of Injectable Autologous Cartilage Using Fibrin Glue in the Rabbit Model**

Richard W. Westreich, MD, New York, NY  
Matthew R. Kaufman, MD, New York, NY  
Patrick P. Gannon, PhD, New York, NY  
William L. Lawson, MD DDS\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss current concepts and objectives in cartilage tissue engineering.

**OBJECTIVES:** To create an injectable model for autologous in vivo elastic cartilage engineering with ultimate clinical applicability in human subjects. **STUDY DESIGN:** Prospective analysis of a novel in vivo chondrogenesis model. **METHODS:** 4 New Zealand White Rabbits underwent a unilateral harvest of auricular cartilage. Samples were then digested using standard methods. 2 samples, fibrin glue (Tisseel-TM) and chondrocytes with or without basic fibroblast growth factor (b-FGF) and Insulin Like Growth Factor 1 (IGF-1), were injected subcutaneously into each donor rabbit and then left in situ for 3 months. After harvest, analysis of overall volume, histology, and chondrocyte drop out were performed. **RESULTS:** Cartilage formation occurred in 3/7 (43%) of specimens that were obtained at the time of sacrifice. Cartilage formation and chondrocyte survival was not effected by the addition of growth factors. All cartilage forming implants demonstrated a perichondrial layer, although these cells were not included in the injections. Alcian blue demonstrated active matrix deposition and EVG elastin stains were positive, showing an elastic cartilage phenotype. **CONCLUSIONS:** This represents the first time cartilage has been tissue engineered in vivo using a subcutaneous implantation of fibrin glue in an immunocompetent host. In addition to demonstrating the feasibility of in vivo chondrogenesis, it is also the first time elastic cartilage has been tissue engineered.

**2:08 Pedicled Temporoparietal Fascial Flap (TPFF) Reconstruction of Select Intra-Oral Defects**

Vijay K. Nayak, MD, Boston, MA  
Daniel G. Deschler, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the role of the pedicled temporoparietal fascial flap as an option in the reconstruction of oral defects.

**OBJECTIVES:** Multiple modalities exist for reconstruction of oral cavity defects following resection. Although microvascular free tissue transfer has revolutionized reconstructive surgery making this the initial choice for reconstruction, not all patients are suitable candidates for "free flaps". We present our experience with the pedicled temporoparietal fascial flap (TPFF) for reconstruction of selected intra-oral defects. **STUDY DESIGN:** Retrospective chart review. **METHODS:** Charts of patients who underwent a TPFF for reconstruction of intra-oral defects at a tertiary academic institution between 2000 to 2003 were reviewed. Information regarding tumor, surgical procedure, complications, and results were gathered. The anatomy and surgical technique of the TPFF is reviewed. **RESULTS:** 3 patients underwent reconstruction of an intra-oral defect with a TPFF. All patients had specific contraindications for free flaps including compromised donor site and recipient site vascularity, age, and medical comorbidities. The procedures were uncomplicated. There was no incidence of flap failure and all flaps accepted a split thickness skin graft. The average hospital stay was 7 days. Patients were begun on an oral diet on the fifth post-operative day. The cosmetic result at the donor site was excellent. Follow-up has ranged between 7 to 30 months. Two of the patients developed mild contracture of the flap limiting mandibular motion. **CONCLUSIONS:** The temporoparietal fascial flap is a thin, vascular, durable flap that is a viable option for reconstruction of selected intra-oral defects in those patients who are not suitable candidates for other methods.

**2:16 Hereditary Hemorrhagic Telangiectasia: An Update for the Otolaryngologist in 2003**

Elizabeth J. Mahoney, MD+, Boston, MA  
Melin E. Tan, BM MM, Boston, MA  
Stanley M. Shapshay, MD\*, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to cite the new diagnostic criteria for hereditary hemorrhagic telangiectasia (HHT), identify the mutations associated with HHT, triage HHT patients for the appropriate multidisciplinary screening evaluation and implement a therapeutic plan for an HHT patient based on the severity of disease.

**OBJECTIVES:** To review the clinical presentation and natural history of hereditary hemorrhagic telangiectasia (HHT) as well as to update the otolaryngologist on the new diagnostic criteria, recent advances in molecular genetics, current recommendations for systemic screening of HHT patients and their children and novel therapeutic interventions for HHT. **STUDY DESIGN:** A comprehensive review of the literature on HHT and retrospective review of this institution's experience with managing 60 HHT patients over the last three years. **METHODS:** Review of Medline literature and review of one institution's diagnostic and management algorithms for HHT. **RESULTS:** HHT is an autosomal dominant disorder characterized by incomplete penetrance. On a molecular level, mutations in two genes, endoglin and ALK-1, have been associated with HHT. Most morbidity associated with HHT is secondary to systemic vascular malformations with incidence estimated as follows: pulmonary AVMs (5%-50%), cerebral AVMs (5%-20%) and gastrointestinal bleeding (10%-40%). Screening for these malformations is recommended and algorithms for such screening are reviewed. A wide variety of treatments have been applied in the management of epistaxis in HHT patients. An update on laser photocoagulation is provided and this institution's algorithm for the management of HHT patients with Nd-YAG laser photocoagulation and septodermoplasty is highlighted. **CONCLUSIONS:** Because refractory epistaxis is a hallmark of HHT, the otolaryngologist is often called upon to make the diagnosis and guide management. With an appropriate diagnostic and therapeutic algorithm in place as well as an awareness of developments in the genetic and clinical screening of HHT patients, the otolaryngologist can implement appropriate multidisciplinary evaluation and optimize therapeutic interventions.

**2:24 DISCUSSION**

**2:32 Airway Protection and Use of the Laryngeal Mask Airway in Sinonasal Surgery**

Neil Bhattacharyya, MD, Boston, MA  
Gregory J. Crosby, MD, Boston, MA  
Andrew Kaplan, BA, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to ascertain the safety of the laryngeal mask airway for airway protection from bleeding during sinonasal surgery.

**OBJECTIVES:** Determine if the laryngeal mask airway (LMA) provides airway protection from blood comparable to that of an endotracheal tube (ETT) during sinonasal surgery. **STUDY DESIGN:** Nonrandomized controlled prospective clinical trial. **METHODS:** Patients undergoing sinonasal surgery were prospectively enrolled and grouped according to type of airway device during general anesthesia. Clinical data were tabulated including tube type, age, weight, estimated blood loss, air leak pressure around the cuff (pop-off pressure), and quality of emergence. At the conclusion of surgery, the airway was examined via the LMA or ETT with a flexible fiberoptic bronchoscope to determine the amount of blood present on the vocal cords or in the trachea. **RESULTS:** 74 adult patients completed the trial. ETT and LMA intubation were utilized in 31 and 43 patients, respectively. The two groups did not differ with respect to age, weight, surgical blood loss, pop-off pressure or emergence quality (all p>0.05). Patients managed

with an LMA were significantly less likely to have blood staining the airway (glottis or trachea) than patients managed with an ETT (19.5% versus 84.8%, respectively;  $p < 0.001$ , Chi-square). However, an ETT protected better against distal tracheal blood contamination than the LMA (3.2% versus 14.6%;  $p = 0.11$ ). **CONCLUSIONS:** During sinonasal surgery, the LMA protects the glottis and upper trachea from blood contamination better than a standard ETT. Fear of blood contaminating the tracheobronchial tree should not preclude use of the LMA in sinonasal surgery.

#### **2:40 Infectious Mononucleosis and Corticosteroids: Management Practices and Outcomes**

Scott K. Thompson, MD+, Rochester, NY  
Arthur S. Hengerer, MD\*, Rochester, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to review current diagnostic and therapeutic strategies for infectious mononucleosis and its complications and to compare published recommendations with actual management practices.

**OBJECTIVES:** Although many studies have been performed and recommendations made regarding the use of corticosteroids for the treatment of acute infectious mononucleosis, few have examined actual treatment patterns and outcomes. The purpose of this study is to review current treatment practices and outcomes with respect to uncomplicated and complicated IM. **STUDY DESIGN:** A retrospective case series of all immunocompetent patients diagnosed with IM in our institution over the previous 5 years was performed. **METHODS:** Information including age, sex, presenting history and physical findings, pertinent laboratory data, management practices and outcomes was recorded and analyzed. **RESULTS:** Two hundred six patients were identified for evaluation. Diagnosis was based on positive heterophile antibody test with appropriate clinical findings (97%) or by the presence of lymphocytosis with appropriate clinical findings (3%). Corticosteroid therapy was employed in approximately 45% of all cases reviewed. Evaluation of indications for this therapy revealed that only 9% of the study population qualified by traditional criteria for the use of corticosteroids, while 91% met no such criteria. Factors associated with increased corticosteroid usage included a history of previous visits ( $p < 0.0001$ ), inpatient admission ( $p < 0.0001$ ), and otolaryngologic consultation ( $p < 0.0001$ ). Corticosteroid usage was not positively associated with fever, decreased oral intake, or length of symptoms. No significant differences in incidence of complications, rates of admission, or length of hospital stay were noted between the steroid and non-steroid treated groups. **CONCLUSIONS:** Despite almost universal acceptance in the pediatric and infectious disease literature that corticosteroid therapy in the setting of IM should be limited to cases of impending airway obstruction, they continue to enjoy utilization on a much broader scale at this tertiary care institution. Apparently, clinicians see value beyond the classically accepted paradigm. Moreover, despite previous reports of possible adverse consequences of corticosteroid therapy for this entity, our review failed to demonstrate any such trend.

#### **2:48 HIPAA: The Price Tag on Patients' Rights**

Giriraj K. Sharma, Pittsburgh, PA  
Jonas T. Johnson, MD\*, Pittsburgh, PA  
Robin Wagner, Pittsburgh, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the cost of HIPAA compliance in a research department at an academic health center.

**OBJECTIVES:** The goal of this study was to determine how HIPAA compliance affects the budget of a research department in an academic health center. Long-term effects of HIPAA on practice-based learning were also evaluated. **STUDY DESIGN:** A research registry at an academic health center carries health information on thousands of patients. To comply with HIPAA, a mass mailing campaign was conducted at an otolaryngology research department in an academic health institution. The purpose was to obtain patient authorization of disclosure of their health data. The total costs associated with this task were compiled. **METHODS:** Consents were mailed to all patients within the registry and to those with specific diagnosis codes. Returned mail was sorted for valid consents and the registry was updated accordingly. All consent processing and mailing data were tallied and assigned cost values. Employee salaries associated with the project were also accounted for. **RESULTS:** As of July 30, 2003, 4531 consents were returned from a mass mailing to 22,330 patients. By extrapolating the cost per mailed consent, an estimated total of \$30,615.95 was spent to process and mail all consents. Registry specialists' salaries totaled to \$8032.50 for 945 hours of work. Thus, the total cost of HIPAA compliance within the otolaryngology research department is estimated at \$38,648.45. **CONCLUSIONS:** While the undertaking of this project was expensive, it is less costly than the lost data collected over many years. HIPAA laws were written without considering the effect on research and practice-based learning. The financial impact to academic departments and physicians will be discussed.

#### **2:56 DISCUSSION**

#### **3:04 Break/Poster Presentations/Visit with Exhibitors - Ballrooms D and E**

**MODERATORS: JOSEPH B. JACOBS, MD\*, NEW YORK, NY  
MARVIN P. FRIED, MD\*, BRONX, NY**

#### **3:30 Recurrence Rates After Endoscopic Sinus Surgery for Massive Sinus Polyposis**

Rhoda Wynn, MD, Brooklyn, NY  
Gady Har-El, MD\*, Brooklyn, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss recurrence rates and need for revision surgery in patients with massive sinus polyposis.

**OBJECTIVES:** Most studies on outcome after endoscopic sinus surgery (ESS) include patients with varying degrees of disease severity. Recurrence rates cited by those studies may not apply to the subset of patients with severe polyposis. We aim to provide reference information for recurrence rates and need for revision surgery in patients with severe disease. **STUDY DESIGN:** Retrospective review of patients with severe polyposis with a minimum Lund-McKay score of 16 and with a Kennedy CT stage 3 or 4. **METHODS:** Data collection included demographics, presence of asthma and/or documented allergy, history of previous surgery, extent of surgery, pre-operative and post-operative management, recurrence rates, revision surgery rates and follow-up. **RESULTS:** One-hundred and eighteen records were reviewed. Fifty-nine (50%) patients had asthma and 93 (79%) had documented allergy. All required extensive bilateral nasal polypectomy, complete anterior and posterior ethmoidectomy, and maxillary sinusotomy. One-hundred (85%) also had frontal and/or sphenoid sinusotomy. Follow-up ranged from 12 to 168 months (median 40 months). Seventy-one (60%) developed recurrent polyposis. Fifty-five (47%) were advised to undergo revision surgery and thirty-two (27%) underwent surgery. History of previous sinus surgery or asthma predicted higher recurrence ( $p < 0.005$ ,  $p < 0.001$ ) and revision surgery rates ( $p = 0.02$ ,  $p < 0.001$ ). History of allergy also predicted recurrence and need for revision ( $p < 0.001$ ,  $p < 0.001$ ). **CONCLUSIONS:** Recurrence rates after ESS for severe polyposis are significant. In our study, patients with asthma are at higher risk of recurrence.

#### **3:38 The Incidence of Methicillin-Resistant Staphylococcus Aureus Causing Chronic Rhinosinusitis**

Casey R. A. Manarey, MD, New York, NY  
Vijay K. Anand, MD\*, New York, NY  
Clark Huang, MD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants will understand the incidence of chronic rhinosinusitis caused by methicillin-resistant staphylococcus aureus and will be able to discuss two factors that may contribute to the development of the condition including antibiotic usage and past endoscopic surgical pro-

cedures.

**OBJECTIVES:** To identify the incidence of MRSA causing chronic rhinosinusitis (CRS) and identify whether antibiotic usage and previous endoscopic sinus surgeries contribute to its development. **STUDY DESIGN:** A retrospective case control analysis with the control group randomly selected and matched for age and sex. **METHODS:** All patients undergoing an endonasal culture in a tertiary otolaryngology center between April 2001 and March 2003 for mucopurulent rhinosinusitis were identified. A chart review was undertaken to identify those patients with a positive MRSA culture result. An age and sex matched control group was randomly chosen and an interview conducted to identify antibiotic usage and previous endoscopic sinus surgeries. A statistical analysis on these two variables was carried out using a t-test and the Wilcoxon-rank sum test. **RESULTS:** 280 cultures were identified in 188 patients, of these, 264 cultures in 173 patients met the inclusion criteria. There were 141 positive cultures and 13 positive MRSA cultures. The overall incidence of MRSA in this population was 9.22%. The mean number of antibiotic courses in the MRSA and the control groups was 33.2 and 26.7 respectively, which was not statistically significant ( $p=0.43$ ). The 95% confidence interval (CI) for this mean difference of 6.5 is -9.8 to 22.8. The mean number of ESS procedures in the MRSA and control groups was 2.0 and 1.9 respectively, which was not statistically significant ( $p=0.93$ ). The 95% confidence interval (CI) for this mean difference of 0.06 is -1.3 to 1.4. **CONCLUSIONS:** We identified a 9.22% incidence of MRSA causing CRS. The frequency of antibiotic usage and previous ESS surgeries were found not to be statistically significant causes of MRSA sinusitis. However, the 95% confidence interval for antibiotic usage is skewed to the right indicating a possible role for its contribution to the emergence of MRSA causing CRS.

### 3:46 The Efficacy of Montelukast in the Treatment of Nasal Polyposis: A Pilot Study

David A. Kieff, MD, Boston, MA  
Nicolas Y. Busaba, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the role montelukast may potentially have in treating patients with nasal polyposis and be able to formulate further studies on the topic.

**OBJECTIVES:** To investigate the efficacy of montelukast in treating nasal polyposis. **STUDY DESIGN:** Prospective case series of 24 consecutive patients with symptomatic nasal polyposis. **METHODS:** 24 consecutive patients with nasal polyposis who were already on daily nasal steroids were started on montelukast 10mg per day for 3 months. Patients were given a validated symptom score survey at the start and end of therapy, with a lower symptom score indicating fewer symptoms. The patients' polyps were biopsied pre- and post-treatment to determine their degree of eosinophilia. Eosinophilia was graded on a scale of 0-3, 3 being severe. In addition, data about the patients' allergic status was collected. **RESULTS:** Patients tended to improve on montelukast therapy in terms of their symptoms scores and polyp eosinophil counts. The symptoms improved in 17 patients (71%) and remained the same or worsened in 7 patients (29%). The symptom score for the group improved from a pre-treatment value of 33.4 (standard deviation=7.73) to a post-treatment value of 23.3 (standard deviation=13.73). The improvement was most noticeable in the patients with environmental allergies. In addition, the polyp eosinophilia score improved from 2.25 (standard deviation=0.68) to 1.5 (standard deviation=0.82), ( $p<.01$ ). **CONCLUSIONS:** Montelukast therapy for patients with nasal polyposis appears to be beneficial. Patients with environmental allergies seem more likely to respond to treatment.

### 3:54 DISCUSSION

#### 4:02 PANEL: CONTROVERSIES IN RHINOLOGY

**MODERATOR:** Michael Setzen, MD, Manhasset, NY

##### PANELISTS AND TOPICS:

##### Turbinate Surgery: What to Do and Why

Peter H. Hwang, MD, Portland, OR

##### What Is Maximal Medical Therapy in Sinusitis

James Palmer, MD, Pittsburgh, PA

##### Role of Fungi in Sinusitis

Bradley F. Marple, MD, Dallas, TX

##### Managing Recurrent and Persistent Sinus Disease Post-FESS

David W. Kennedy, MD\*, Philadelphia, PA

##### Discussion and Q&A

Michael Setzen, MD, Manhasset, NY

### 5:00 Adjourn

### 5:30 - Reception - Ballroom B Foyer

7:00

SUNDAY, JANUARY 25, 2004

7:00 - Registration - Ballroom E Foyer  
noon

7:00 - Speaker Ready Room - Ballroom E Foyer  
noon

7:00 - Business Meeting (Members Only) - Broadway  
7:45

7:00 - Poster Viewing - Foyer  
10:30

7:00 - Exhibit Hall Open - Empire State Ballrooms D and E  
10:30

7:00 - Continental Breakfast with Exhibitors - Ballrooms D and E  
7:45

7:50 - Scientific Session - Ballroom C  
noon

**MODERATORS: LORNE S. PARNES, MD\*, LONDON, ON  
SAMUEL H. SELESNICK, MD\*, NEW YORK, NY**

7:50 **SECOND PRIZE (TIE) - RESIDENT RESEARCH AWARD**  
**Pathogenic Microbial Resistance is Associated with Otological Quinolone Use**  
Nicole Schrader, MD+, Philadelphia, PA  
Glenn Isaacson, MD\*, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand several of the potential microbiologic complications from the widespread use of topical quinolones.

**OBJECTIVES:** Ciprofloxacin and ofloxacin have been aggressively marketed as the drugs of choice for the treatment of otitis externa, tube otorrhea, and chronic suppurative otitis media. Their effectiveness against a broad range of bacteria and lack of ototoxicity have made them attractive choices. We sought to determine whether their use was associated with the emergence of resistant bacteria and fungi during treatment. **STUDY DESIGN:** Case-control series. **METHODS:** We compared the rate of recovery of candida albicans, methicillin-resistant staphylococcus aureus, and quinolone-resistant pseudomonas aeruginosa from ear cultures during a 12 month period (2002-2003) to that in a year prior to the widespread use of quinolones (1998-1999). **RESULTS:** Six children presented with methicillin-resistant staphylococcus aureus and 22 presented with fungal otitis (12 with culture proven candida albicans) in 2002-2003. All had been treated with quinolones. There was no methicillin-resistant staphylococcus aureus in 1998-1999. Quinolone susceptibility among pseudomonas aeruginosa isolates decreased from 86% to 46%. **CONCLUSIONS:** A marked increase in the antibiotic resistance of two pathogenic bacteria has occurred since the widespread use of quinolones for the topical treatment of otorrhea. Fungal otitis is no longer rare.

7:58 **Follow-Up MR Appearance of Facial Muscles Correlates with Facial Function After Acoustic Neuroma Surgery**  
David M. Kaylie, MD, Nashville, TN  
C. Gary Jackson, MD\*, Nashville, TN  
Joseph M. Aulino, MD, Nashville, TN  
Edward K. Gardner, MD, Nashville, TN  
Jane L. Weissman, MD, Portland, OR

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to evaluate MR appearance of facial muscles and compare this to facial function.

**OBJECTIVES:** To show that the appearance of facial muscles on MR studies obtained one year after acoustic neuroma surgery accurately reflects facial muscle function. **STUDY DESIGN:** Retrospective chart/MR review. **METHODS:** Two hundred forty-seven patients underwent acoustic neuroma surgery between 1/1/97 and 12/31/2001. Eighty-four patients had MR and documented facial function at a minimum of one year post surgery. Facial function was classified using the House-Brackmann (HB) scale. MR appearance of facial muscles on MR was evaluated by a neuroradiologist without knowledge of facial function and classified as symmetrical or asymmetrical. **RESULTS:** Twenty-nine patients had asymmetrical facial muscles and HB grade III or worse. Of these, 24 had normal preoperative facial muscles on MR and normal facial function. Forty-nine patients had symmetrical postoperative images and final function of HB I or II. Six patients had final facial function of HB III or worse but had normal postoperative symmetry of facial muscles. No patients had asymmetrical postoperative facial muscles and normal function. The sensitivity for postoperative images reflecting facial function for all sized tumors is 83%, and the specificity is 100%. The positive predictive value of MR appearance of facial muscles correlating with function is 100% and the negative predictive value is 89%. **CONCLUSIONS:** Postoperative MR appearance of facial muscles strongly correlates with facial function after acoustic neuroma surgery.

8:06 **Mid-Frequency Sensorineural Hearing Loss: Etiology and Prognosis**  
Rahul K. Shah, MD+, Boston, MA  
Nikolas H. Blevins, MD, Boston, MA  
Collin S. Karmody, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the etiology, management, and prognosis of patients with a mid-frequency sensorineural hearing loss, or "U"-shaped audiogram.

**OBJECTIVES:** An audiometric finding of mid-frequency sensorineural hearing loss (MFSNHL), or "U"-shaped pattern, is uncommon. The objective of this study is to investigate the etiology and prognostic significance of MFSNHL. **STUDY DESIGN:** Tertiary academic referral center. Retrospective case review and review of random audiograms to determine the prevalence of this audiometric finding. **METHODS:** Patients with an average of pure tone thresholds at 1, 2, and 4 kHz at least 10 dB greater than the thresholds at .5 and 8 kHz were included in this study. Forty patients (with 103 audiograms) met these criteria. These charts were reviewed for pertinent otologic history and management. **RESULTS:** The prevalence of MFSNHL in this practice setting is less than 1%. Serial audiograms were obtained for 14 patients. The mean age of the patient was 31.5 years old (range 3 to 70 years). Seven patients (18%) were under 18 years of age. The average mid-frequency dB hearing, 46 dB, was 16 dB and 18 dB lower than at

.5 Hz and 8 kHz, respectively. The average PTA and speech discrimination score are 42 dB and 89%. Sixteen patients (40%) required amplification. Of all patients, 24 had congenital or hereditary hearing loss, 11 had idiopathic hearing loss, and 5 adults had vestibular schwannomas. **CONCLUSIONS:** MFSNHL is an uncommon audiometric finding. The great majority of these cases are of presumed familial or idiopathic etiology, although 15% of adults had vestibular schwannomas. This series presents the etiology and prognosis of this audiometric pattern with a management algorithm.

#### 8:14 DISCUSSION

#### 8:22 Estimated Annual Incidence of Drug-Induced Tinnitus by the “Top 200” Prescription Medications in the USA

Daniel I. Plosky, BA, Newark, NJ  
Avrim Eden, MD\*, Newark, NJ  
Jed A. Kwartler, MD, Newark, NJ

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, participants should be able to discuss the incidence of drug-induced tinnitus for the 200 most commonly prescribed medications in the USA, and identify the four therapeutic classes of drugs most likely to do so.

**OBJECTIVES:** To estimate the annual incidence of the adverse effect of tinnitus induced by the 200 most commonly prescribed medications. **STUDY DESIGN:** Analysis of reported incidence of tinnitus greater than placebo during clinical trials correlated with new and renewal prescription volumes. **METHODS:** The 200 most prescribed medications for 2001 were cross-referenced with the PDR to identify medications that have been reported to cause tinnitus during clinical trials. The dataset was modified to combine medications listed multiple times under different formulations and brands and further classified by therapeutic class. Estimates of tinnitus incidence were made using prescription volumes and reported tinnitus incidence for each medication. **RESULTS:** The estimated annual incidence of drug-induced tinnitus is approximately 2-3 million people (about 1% of the US population). Sixty (37%) of the 161 unique medications in the reduced dataset are associated with tinnitus. Over half (53%) of the 92 most commonly prescribed medications for four therapeutic classes (analgesics, cardiac, central nervous and gastrointestinal systems) are associated with inducing tinnitus. Only 16% of the remaining 69 medications in other classes are associated with tinnitus. **CONCLUSIONS:** This is the first study to estimate the national incidence of medication-induced tinnitus based on prescription volume. Patients with chronic diseases that require analgesia, or control of cardiac, central nervous or gastrointestinal conditions are at highest risk for the adverse drug reaction of tinnitus. We hypothesize that patients who receive multiple medications, each associated with tinnitus, may be at increased risk of tinnitus because of potential additive effects.

#### 8:30 Auditory Brainstem Implantation in Patients with Neurofibromatosis Type 2: A Decade of Experience

Seth J. Kanowitz, MD, New York, NY  
J. Thomas Roland, MD, New York, NY  
John G. Golfinos, MD, New York, NY  
Michelle S. Marrinan, MD, New York, NY  
William H. Shapiro, MA, New York, NY  
Noel L. Cohen, MD\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the candidacy criteria, the auditory and surgical outcomes, as well as the side effects in patients implanted with an auditory brainstem device.

**OBJECTIVES:** Multichannel auditory brainstem implants (ABI) are currently indicated for patients with neurofibromatosis type II (NF-2) and profound sensorineuronal hearing loss caused by the tumors and/or the treatment of the tumors. The implant is placed at the time of tumor resection in the lateral recess of the fourth ventricle to stimulate the cochlear nucleus. This study aims to review the surgical and audiological outcomes in 18 patients implanted from 1994 through 2003. **STUDY DESIGN:** A retrospective chart review of 18 patients with ABI's. **METHODS:** We evaluated demographic data including age at implantation, number of tumor resections prior to implantation, tumor size, surgical approach, and post-operative surgical complications. The ABI auditory results at one year were then evaluated for number of functioning electrodes and channels, hours per day of use, and non-auditory side effect profile. Audiologic data including MTS word and stress scores, Nu Chips, and auditory sensitivity are also reported. **RESULTS:** No surgical complications due to ABI implantation were revealed. A probe for lateral recess and cochlear nucleus localization was helpful in several patients. A range of auditory performance is reported and two patients had no auditory perceptions. Electrode paddle migration occurred in two patients. Patient education and encouragement is very important to get maximum benefit. **CONCLUSIONS:** ABI's are safe, do not increase surgical morbidity, and allow patients to experience improved communication as well as access to environmental sounds. Non-auditory side effects can be minimized by selecting proper stimulation patterns. ABI's continue to be an emerging field for hearing rehabilitation in patients who are deafened by NF-2.

#### 8:38 The Status of the Contralateral Ear in Established Unilateral Meniere's Disease

Ronen Perez, MD, Toronto, ON Canada  
Joseph M. Chen, MD, Toronto, ON Canada  
Julian M. Nedzelski, MD\*, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to have an appreciation for what appears to be a lower than previously reported incidence of bilateral Meniere's disease.

**OBJECTIVES:** To determine whether there are measurable audiometric changes in the contralateral ear in individuals with long-standing unilateral Meniere's disease. **STUDY DESIGN:** Analysis of data of an ongoing prospective study. **METHODS:** One hundred and twenty five patients who are currently under study have been followed for a minimum of two years. Each had undergone intratympanic gentamicin installation as treatment for disabling unilateral Meniere's disease. Analysis of treatment outcome was as per AAO guidelines. The incidence of Meniere's disease (clinical diagnosis) as compared to audiometric changes in the contralateral ear is reported. **RESULTS:** Contrary to several published reports the development of bilateral Meniere's disease in our series is much lower (5%). On the other hand, the audiometric finding of an asymptomatic isolated low frequency hearing loss (>10dB) is in the order of 15%. **CONCLUSIONS:** In our experience individuals with long-standing disabling unilateral disease are not likely to develop bilateral disease. However 15% do have audiometric changes in the contralateral ear in the low frequencies (250, 500 Hz) without symptoms.

#### 8:46 DISCUSSION

#### 8:53 Presentation of Awards

#### 9:00 PANEL: CONTROVERSIES IN OTOLOGY

**MODERATOR:** Sujana S. Chandrasekhar, MD\*, New York, NY

#### PANELISTS AND TOPICS:

#### What's New in Genetic Evaluation of Hearing Loss

Margaret A. Kenna, MD\*, Boston, MA

#### Surgical vs. Radiation Treatment of Acoustic Neuromas

Anil K. Lalwani, MD\*, New York, NY

### Meaningful Tests for Vestibular Evaluation

Douglas Chen, MD, Pittsburgh, PA

### Alternative Therapies for Tinnitus and Dizziness

Benjamin Asher, MD, Berlin, VT

### Discussion and Q&A

Sujana S. Chandrasekhar, MD\*, New York, NY

## 9:50 Break/Poster Presentations/Visit with Exhibitors - Ballrooms D and E

**MODERATORS: JOSEPH HADDAD, JR., MD\*, NEW YORK, NY  
CHARLES D. BLUESTONE, MD\*, PITTSBURGH, PA**

### 10:20 The Diagnostic Accuracy of Computed Tomography in Pediatric Chronic Rhinosinusitis

Neil Bhattacharyya, MD, Boston, MA

Dwight T. Jones, MD, Boston, MA

Micah Hill, MD, Stanford, CA

Nina L. Shapiro, MD, Los Angeles, CA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the diagnostic accuracy of CT in the diagnosis of pediatric CRS and utilize appropriate clinical cutoffs to refine the diagnosis of CRS in pediatric patients.

**OBJECTIVES:** Determine the clinical accuracy and diagnostic criteria for computed tomography (CT) in pediatric chronic rhinosinusitis (CRS). **STUDY DESIGN:** Retrospective dual cohort analysis of diseased and normal populations. **METHODS:** CT scans of pediatric patients meeting clinical criteria for the diagnosis of CRS and scheduled to undergo sinus surgery were scored according to the Lund-Mackay system. The CT scans of a control group of patients without CRS undergoing paranasal sinus CT for non-sinusitis reasons were also staged, constituting a non-diseased group. Radiographic findings and Lund scores were compared between groups using the receiver-operating characteristic (ROC) curve. Sensitivity and specificity analyses were conducted. **RESULTS:** One hundred ninety-two control patients (age range, 1-18 years) were studied manifesting a mean Lund score of 2.81 (95% confidence interval, 2.40-3.22). Forty-four patients in the diseased group (age range, 1.5-16 years) were studied, manifesting a mean Lund score of 11.33 (95% CI, 9.95-12.72). The area under the ROC curve was 0.936,  $p < 0.001$ , indicating excellent diagnostic accuracy between groups. Adopting a Lund score cutoff of 5 or greater resulted in a sensitivity and specificity of 92% and 90%, respectively, for the diagnosis of CRS. **CONCLUSIONS:** The paranasal sinus CT scan exhibits excellent accuracy in the diagnosis of pediatric CRS and may help to either confirm or exclude the diagnosis of CRS in appropriately selected pediatric patients.

### 10:28 Long-Term Effects of Cochlear Implants in Children with Severe Cochlear Malformations

Andrew J. Fishman, MD, New York, NY

Michelle S. Marrinan, MD, New York, NY

William S. Shapiro, MA, New York, NY

Susan B. Waltzman, PhD, New York, NY

Noel L. Cohen, MD\*, New York, NY

J. Thomas Roland, Jr., MD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the long-term effects of cochlear implants in children with severe cochlear malformations.

**OBJECTIVES:** To examine the medical/surgical consequences and auditory/linguistic benefits and performance over time in implanted children with severe cochlear malformations. **STUDY DESIGN:** Retrospective analysis. **METHODS:** Six children implanted 2+ years with severe cochlear malformations defined as either common cavity or small hypoplasias of less than one complete luminal turn. Incomplete partition and enlarged vestibular aqueduct by definition are excluded. Malformations were evaluated using high resolution CT and MRI. Intraoperative fluoroscopy was utilized when appropriate and follow-up radiography was performed as necessary. Intraoperative plain radiographs were obtained in cases not employing fluoroscopy. A standard battery of age appropriate auditory, speech perception and linguistic tools were used to measure pre-operative levels and postoperative progress. **RESULTS:** A wide range of auditory and linguistic performance was achieved. There were no facial nerve complications. Three patients required revision surgery. One patient required spinal drainage for CSF fistula. There were no cases of meningitis among these patients. **CONCLUSIONS:** Tangible benefits from implantation may be obtained in children with severe cochlear malformations. Complications can be minimized with appropriate use of adjunctive imaging and surgical techniques.

### 10:36 Use of the Transglabellar Subcranial Approach for the Management of Nasal Dermoids with Intracranial Extension in Infants

Robert M. Kellman, MD, Syracuse, NY

Parul Goyal, MD, Syracuse, NY (Presenter)

Gerard S. Rodziewicz, MD, Syracuse, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to describe the presentation and evaluation of nasal dermoids, the technique of the subcranial approach and its use in the management of nasal dermoids.

**OBJECTIVES:** Nasal dermoids are the most common congenital midline nasal lesions. When a midline nasal pit or cyst is identified, scans should be obtained to look for an intracranial connection. The intracranial portion of the lesions has traditionally been approached by the performance of a frontal craniotomy. The transglabellar subcranial approach is a useful technique to resect these lesions and offers several advantages over a traditional craniotomy approach. **STUDY DESIGN:** Retrospective case review. **METHODS:** Records of two patients who underwent excision of nasal dermoids via a subcranial approach were analyzed. **RESULTS:** Two patients underwent successful resection of nasal dermoids with intracranial extension via a subcranial approach. The patients were 13 months and 19 months old at the time of excision and have each been followed for 6 years. There has not been any recurrence of the lesions. There has been no apparent negative impact on facial growth in either of these cases. **CONCLUSIONS:** The subcranial approach is an effective technique for the resection of nasal dermoids with intracranial extension. These lesions have traditionally been managed with lateral rhinotomy, midface degloving, or external rhinoplasty approaches combined with a frontal craniotomy. The subcranial approach offers excellent exposure, minimizes frontal lobe retraction, reduces the likelihood of cerebrospinal fluid leak, and provides for excellent cosmetic result. This approach was used in two cases with long-term follow-up. The lesions were successfully resected in both cases. Long-term follow-up has shown no recurrence or negative effect on craniofacial growth.

### 10:44 Post-Tonsillectomy Hemorrhage—Superstition and Truth

Veena V. Kumar, MD+, Philadelphia, PA

Naveen V. Kumar, MPH, Erie, PA

Glenn C. Isaacson, MD\*, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to say with acceptable statistical certainty whether the commonly held super-

stitutions about post-tonsillectomy bleeding are true.

**OBJECTIVES:** To determine whether post-tonsillectomy hemorrhages occurring in 3's, whether they occur more frequently on Friday the 13th, or with the full moon, and whether redheaded children are more prone to post-tonsillectomy bleeding. **STUDY DESIGN:** Case-control analysis. **METHODS:** All children undergoing tonsillectomy during a two and half year period at our children's medical center were evaluated. Children require readmission with or without surgical control were compared to children who did not bleed. Relation of bleeding to the phase of the moon and Friday the 13th were evaluated by calculating standard normal deviates. Clusters of 3 bleeding events in seven-day periods were compared to a normal distribution. Parents of all tonsillectomy patients were contacted by phone and asked whether their child was redheaded. A Chi-square analysis compared the redheads to non-redheads. **RESULTS:** Twenty-eight of 589 children who underwent tonsillectomy required readmission for bleeding (4.7%). Twenty tonsillectomies were performed on a full moon day result in one bleeding event (5%). Two tonsillectomies were done on a Friday the 13th with no associated hemorrhages. There was one cluster of 3 hemorrhages in a 7 day period. Of 178 families successfully contacted, six children were characterized as having red hair—two of these six children bled (33%). **CONCLUSIONS:** Post-tonsillectomy hemorrhages do not occur in 3's, and are not more frequent with the full moon or on Friday the 13th. Fewer tonsillectomies than expected are performed on Friday the 13th. There was a six-fold increase in the risk of bleeding among children with red hair.

**10:52 DISCUSSION**

**11:00 PANEL: PEDIATRIC OTOLARYNGOLOGY: WHAT'S NEW AND WHAT WORKS**

**MODERATOR: Richard M. Rosenfeld, MD\*, Brooklyn, NY**

**PANELISTS AND TOPICS:**

**Intracapsular and Coblation Tonsillectomy**

Robert F. Ward, MD\*, New York, NY

**Tympanostomy Tube Otorrhea**

Glenn C. Isaacson, MD\*, Philadelphia, PA

**Laryngeal Microdebrider**

George H. Zalzal, MD, Washington, DC

**Discussion and Q&A**

Richard M. Rosenfeld, MD\*, Brooklyn, NY

**11:55 Introduction of Vice President-Elect, Steven M. Parnes, MD\*, Albany, NY**

Frank E. Lucente, MD\*, Brooklyn, NY

**12:00 Adjourn**

## POSTERS

### 1. Safety of Parathyroidectomy in Octogenarians

Patrick C. Barth, MD, Danville, PA  
Philip K. Pellitteri, DO\*, Danville, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to better appreciate the role of parathyroidectomy in the octogenarian population.

**OBJECTIVES:** With increasing longevity noted in the general population more patients 80 years or older represent candidates for parathyroidectomy. **STUDY DESIGN:** Retrospective review. **METHODS:** This discussion reviews our experience with the perioperative course and early outcome in 12 patients above the age of 80 undergoing parathyroid exploration over a seven (7) year time interval. **RESULTS:** Preoperative indications for surgery included hypercalcemia, osteoporosis, vertebral fractures, and renal calculi. There were no surgical complications and the average length of stay was similar to that of patients under the age of 80. Several minor nonsurgical complications were encountered, primarily as a consequence of pre-existing medical conditions. Normocalcemia was achieved in all patients with a minimum 6 months follow-up. Both quality of life and pre-operative symptom complex were felt to be improved following operation. **CONCLUSIONS:** Parathyroidectomy may be performed safely and effectively in patients older than 80 years with protection from the comorbidity of hyperparathyroidism in appropriately selected patients. Careful attention to the pre-operative medical condition of candidate patients is important in preventing post-operative metabolic complications.

### 2. Early Extubation Following Major Tracheal Surgery in Children

Seth M. Brown, MD MBA, Bronx, NY  
Josh D. Rosenberg, BA, New York, NY  
Sanjay R. Parikh, MD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the complications of airway stenting following major airway surgery. Furthermore, they should be able to explain the advantages as well as the risks of early extubation in single staged airway procedures. This presentation will demonstrate that in appropriate patients, extubation on the first post-operative day can lead to successful outcomes and a more cost effective hospital stay. This should intrigue the audience to attempt to limit the degree of stenting in their own patients following tracheal surgery.

**OBJECTIVES:** To review one institution's initial experience with early extubation after major tracheal surgery. **STUDY DESIGN:** Retrospective review at a tertiary care children's hospital. **METHODS:** Charts of five patients with a mean age of 7 years who underwent major tracheal surgery between July 2002 and June 2003 were reviewed. **RESULTS:** Of the five patients three underwent tracheoplasty with thyroid alar cartilage grafting, one had a cricotracheal resection, and one a tracheal resection. None of the patients required post-operative airway intervention such as reintubation or tracheotomy. All three of the patients who previously had a tracheotomy were successfully decannulated at the time of surgery. There was no incidence of major post-operative complications including pneumonia or wound infections. Furthermore, all of the patients were well at the time of the writing of this manuscript with an average follow-up of 7 months. **CONCLUSIONS:** In select patients, early extubation after major tracheal surgery may have fewer complications compared to stenting, as well as successful decannulation rates.

### 3. Metastasis of Squamous Cell Carcinoma of the Head and Neck to the Submandibular Gland

Agata K. Brys, BA, Boston, MA  
Jeffrey H. Spiegel, MD, Boston, MA  
Mark I. Singer, MD\*, San Francisco, CA  
Amol J. Bhakti, MD, San Francisco, CA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to state when cancerous cells metastasize to the submandibular gland and discuss how this may impact treatment of xerostomia.

**OBJECTIVES:** To determine if and how the submandibular gland is involved in metastases of squamous cell carcinoma of the head and neck. **STUDY DESIGN:** Retrospective chart review. **METHODS:** We reviewed the records of all patients who underwent neck dissections for primary head and neck cancers at two institutions. There were no exclusion criteria. **RESULTS:** Of 169 patients, 27 underwent bilateral neck dissections, with 196 submandibular glands resected and sent for pathology. 144 glands had normal histology. Three submandibular glands showed invasion from a locally involved lymph node and six had direct extension from primary lesion. The primary lesions were all ipsilateral to the involved and originated from floor of the mouth (7), alveolar ridge (1) and tongue (1). Histology of remaining glands revealed benign changes. No submandibular glands showed pathologic evidence of metastases. **CONCLUSIONS:** Because the submandibular gland has no intraparenchymal lymph nodes, its involvement in upper aerodigestive tract carcinomas must be through extension from a locally involved lymph node or the primary tumor. Previous work has demonstrated the submandibular gland can undergo transplantation out of the neck with subsequent reimplantation, a technique protecting the salivary tissue from the effects of radiation. We demonstrated the submandibular gland to be involved only in cases of ipsilateral oral cavity tumors or metastasis to ipsilateral level I lymph nodes. We conclude, it's oncologically sound to consider transplantation and replantation of the contralateral submandibular gland in patients with head and neck squamous cell carcinoma when level I lymph nodes are unlikely to be involved.

### 4. Correlation Between Clinical Pre-Operative Diagnosis and Histopathologic Findings in Patients with Rhinosinusitis

Nicolas Y. Busaba, MD, Boston, MA  
Luciano V. Vilela de Oliveira, MD, Sao Paulo, SP Brazil  
David A. Kieff, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the histopathologic findings in patients with pre-operative clinical diagnosis of rhinosinusitis with and without polyposis and the need to obtain adequate surgical specimen for histopathologic examination.

**OBJECTIVES:** Determine the accuracy of preoperative clinical diagnosis in patients with chronic rhinosinusitis with and without polyposis. **STUDY DESIGN:** Retrospective review. **METHODS:** The medical records of 300 consecutive patients who underwent endoscopic sinus surgery for the preoperative diagnosis of chronic rhinosinusitis (CRS) or chronic rhinosinusitis with polyposis (CRSP). Patients with unilateral polyps, known diagnosis of neoplasm or rhinologic involvement with a systemic disease were not included. Data regarding symptoms, nasal endoscopy and CT findings, preoperative diagnosis, and histopathology were collected. **RESULTS:** The preoperative diagnoses were CRS (n=178) and CRSP (n=122). The polyps were bilateral in all cases included in this review. Two of the 178 patients (1.1%) with the preoperative diagnosis of CRS had a different histopathologic diagnosis. The histopathology in both patients showed granulomas and they were subsequently diagnosed with sarcoidosis. Eight of the 122 patients (5.6%) with the preoperative diagnosis of CRSP had a different histopathologic diagnosis. Of these 8, 5 had inverted papilloma (one was bilateral), 1 had adenocarcinoma, 1 had squamous cell carcinoma, and 1 had chronic invasive granulomatous fungal sinusitis. **CONCLUSIONS:** The preoperative clinical diagnosis can be inaccurate in patients with CRS and CRSP. Adequate tissue specimen for histopathologic examination should be obtained in all such patients including those with bilateral polyps at the time of surgery to confirm the preoperative clinical diagnosis.

**5. A Case Report of Unilateral Parotid Enlargement Presenting as the Initial Manifestation of Wegener's Granulomatosis**

Burke E. Chegar, MD, Syracuse, NY  
Richard T. Kelley, MD, Syracuse, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the incidence of isolated major salivary gland enlargement secondary to Wegener's granulomatosis as well as describe the clinical and histopathological features of the disease.

**OBJECTIVES:** Major salivary gland enlargement is a rare presenting symptom of Wegener's granulomatosis. The unrecognized occurrence of this entity can delay diagnosis leading to increased morbidity from disease progression. This report discusses the clinical features and diagnostic testing of salivary gland enlargement secondary to Wegener's granulomatosis to differentiate it from other, more common salivary gland disorders. **STUDY DESIGN:** A case report of a single subject with unilateral parotid gland enlargement secondary to Wegener's granulomatosis. **METHODS:** A review of the clinical course, diagnostic studies, and histopathology related to the presenting disease. **RESULTS:** A 54 year old male was evaluated for a six week history of progressive right parotid enlargement and pain unresponsive to antimicrobial therapy. Computed tomography scans showed diffuse, unilateral parotid swelling without enhancement and without a mass lesion or sialolith. Multiple open biopsies from the gland were necessary to demonstrate the presence of necrotizing granulomatous inflammation with vasculitis. Elevated cytoplasmic antineutrophilic cytoplasmic antibody (c-ANCA) titers confirmed Wegener's granulomatosis. Hemoptysis and acute renal failure requiring hemodialysis developed shortly after diagnosis but eventually resolved after the initiation of treatment with corticosteroids and cyclophosphamide. **CONCLUSIONS:** Unilateral parotid enlargement is a rare presentation of Wegener's granulomatosis. A high level of clinical suspicion should prompt biopsy and testing of c-ANCA when initial studies or empirical treatment fail to lead to a proper diagnosis. Early treatment may prevent the development of other serious systemic complications such as renal failure.

**6. Isolated Unilateral Pulmonary Artery Agenesis and Pediatric Hemoptysis**

Douglas J. Colson, MD, Syracuse, NY  
Anthony J. Mortelliti, MD, Syracuse, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to recognize IUPAA and other sources of potentially life threatening hemoptysis, discuss the differential diagnosis and treatment options for pediatric patients presenting with hemoptysis, and explain the role of bronchoscopy in the diagnosis and management of hemoptysis.

**OBJECTIVES:** Isolated unilateral pulmonary artery agenesis (IUPAA) is a rare vascular anomaly seen uncommonly by the otolaryngologist. As IUPAA is a potential cause of life-threatening hemoptysis in the pediatric patient, the objective of this paper is to make the physician aware of this clinical entity and to review the management of pediatric hemoptysis. **STUDY DESIGN:** Retrospective case study and literature review. **METHODS:** A case is discussed of a child presenting with hemoptysis secondary to IUPAA. In addition, a review of the literature and the current recommendations for the management of pediatric hemoptysis is summarized. **RESULTS:** IUPAA is an unusual cause of potentially life-threatening hemoptysis in the pediatric patient. Prompt diagnosis and patient stabilization allows the patient access to multiple treatment options including angiography with embolization, surgical revascularization to the residual pulmonary artery, and pneumonectomy for refractory massive hemoptysis. **CONCLUSIONS:** Hemoptysis in the pediatric patient requires prompt and thorough evaluation and treatment. An approach for the management of pediatric hemoptysis, including massive hemoptysis, is described.

**7. Nasopharyngeal Actinomycosis: A Rare Cause of Nasal Airway Obstruction**

Nicole H. Daamen, MD, Pittsburgh, PA  
Jonas T. Johnson, MD\*, Pittsburgh, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to recognize nasopharyngeal actinomycosis as a cause of nasal airway obstruction and ability to treat it effectively.

**OBJECTIVES:** Actinomyces is a common saprophyte of normal oral flora. Rarely, actinomyces can become pathogenic, usually following mucosal trauma and inoculation into an anaerobic environment. We report a patient with nasal airway obstruction and snoring. Subsequent radiological findings and pathology established the diagnosis of nasopharyngeal actinomycosis. This report will allow readers to better understand the disease process and be aware of it as a possible cause of nasal airway obstruction. **STUDY DESIGN:** Case report. **METHODS:** The patient's records were analyzed and the world literature reviewed. **RESULTS:** Only six cases of nasopharyngeal actinomycosis have been reported. One study discussed four Taiwanese males with nasopharyngeal actinomycosis discovered during screening for nasopharyngeal carcinoma. Two cases of nasopharyngeal actinomycosis following surgical instrumentation have also been described. Our study presents a novel case of nasopharyngeal actinomycosis in a non-Asian patient without prior surgery or trauma presenting with nasal airway obstruction and snoring. **CONCLUSIONS:** Nasopharyngeal actinomycosis is a rare entity that can occur without prior known nasopharyngeal trauma. This disease entity needs to be on the differential diagnosis of nasal airway obstruction and snoring as it can mimic other disease processes. The consensus of current literature suggests treatment by debridement of infected tissue and treatment with antibiotics for several weeks. Infected areas may need to be re-excised if response to antibiotics is poor. Prognosis is good if the area infected has been adequately excised and/or treated with antibiotics.

**8. Chemosensitivity of Advanced/Recurrent/Metastatic Head and Neck Squamous Cell Carcinoma in Tissue Culture**

Terrence A. Day, MD, Charleston, SC  
Mary Richardson, MD, Charleston, SC  
Judith M. Skoner, MD, Portland, OR  
Serap Koybasi, MD, Charleston, SC  
M. Boyd Gillespie, MD, Charleston, SC  
Robert Stuart, MD, Charleston, SC

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to identify the potential feasibility of using chemosensitivity studies of head and neck cancers prior to selecting a chemotherapeutic agent.

**OBJECTIVES:** This study was developed to test the hypothesis that HNSCC from tumor biopsy specimens could be analyzed in vitro against a variety of known chemotherapeutics. The objectives were to determine the feasibility of harvesting the tumor tissue for immediate cell growth in which chemotherapeutics can be tested in vitro. Secondary objectives have not been completed but include the clinical correlation in vivo with the in vitro results. **STUDY DESIGN:** Patients diagnosed with recurrent/advanced/metastatic HNSCC were provided the opportunity to enroll and provide sample tissue from a biopsy specimen for in vitro cell growth. **METHODS:** Patients' tissues from known HNSCC sites were grown in tissue culture medium and chemosensitivity testing was then performed using the ChemoFx Assays applying known agents commonly used in treating HNSCC. The growth characteristics and response to chemotherapeutic agents in vitro were then analyzed. **RESULTS:** Eight patients were enrolled in the study. Six out of eight patients had adequate tissue for the study providing a total of seven specimens. Four specimens did not grow sufficiently due to fungal and/or bacterial contamination and could not be studied. A total of three specimens developed sufficient growth for study. The results of treatment with a variety of chemotherapeutic agents will be presented in addition to potential for future application. **CONCLUSIONS:** The harvest of tissue from tumors of patients with HNSCC requires decontamination using antibacterial and antifungal agents to enhance the potential for in vitro growth. Chemosensitivity studies can be performed successfully on HNSCC from patient biopsy specimens in vitro although clinical correlation will require future studies.

## 9. Hyalinizing Trabecular Neoplasm of the Thyroid: Controversies in Management

Joanna B. D'Elia, BA, Philadelphia, PA  
Daniel D. Charous, MD, Philadelphia, PA  
Jeffrey A. Miller, MD, Philadelphia, PA  
Juan P. Palazzo, MD, Philadelphia, PA  
Edmund A. Pribitkin, MD, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to recognize the clinical and pathological characteristics of hyalinizing trabecular neoplasm of the thyroid [HTN] and discuss the management of this tumor of uncertain malignant potential.

**OBJECTIVES:** To review the clinical and pathological picture of HTN and compare HTN with papillary thyroid carcinoma [PTC] in order to discuss the appropriate management of this uncommon but potentially confusing neoplasm. **STUDY DESIGN:** A case review of a patient with HTN treated at our institution. **METHODS:** Case review and MEDLINE literature search. **RESULTS:** Although recognized as a tumor of uncertain malignant potential in the pathology literature, HTN has been rarely reported in otolaryngology journals and its management remains controversial. HTN and PTC share similar histopathological characteristics and have been described as coexistent lesions in the same thyroid. HTNs have also exhibited protooncogenes associated with PTC. Moreover, recent reports have described HTN exhibiting vascular or capsular invasion and even metastases. **CONCLUSIONS:** HTN should still be considered a tumor of uncertain malignant potential. Criteria for treatment of HTN have yet to be determined and many investigators are concerned about the prudence of making broad recommendations on the basis of a few studied cases. Nonetheless, when discussing surgical treatment options and recommendations for postoperative monitoring and radionuclide ablation with patients diagnosed with HTN, physicians may be guided by the criteria for the treatment of PTC at their respective institutions.

## 10. WITHDRAWN--Surgical Management of Laryngeal Amyloidosis: A Case Report

Thomas F. Della Torre, MD, New Haven, CT  
Steven B. Levine, MD, Trumbull, CT  
Clarence T. Sasaki\*, MD, New Haven, CT

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to explain the histopathological findings in primary laryngeal amyloidosis and discuss the efficacy of CO2 laser versus shaver systems in management of recurrent disease.

**OBJECTIVES:** To report our experience in the management of primary laryngeal amyloidosis. **STUDY DESIGN:** We report two cases of laryngeal amyloidosis, a relatively mild case successfully treated using CO2 laser, and another severe case which required more aggressive treatment using CO2 laser as well as a shaver system. We will describe that experience. **METHODS:** A 52 year old male presented with a two year history of hoarseness. Indirect laryngoscopy revealed bilateral vocal cord thickening, and subsequent microlaryngoscopy revealed a multilobulated fullness below the left true vocal cord anteriorly and another along the right membranous cord posteriorly. Following complete excision using microforceps he initially experienced marked improvement in voice quality, yet recurrence of the subglottic amyloid necessitated three additional excisions using CO2 laser over two years. A second patient with relatively severe disease was similarly treated initially using microforceps and CO2 laser. He subsequently underwent treatment using the Xomed shaver system. This patient required multiple excisions for recurrences, with a total of 14 procedures over 14 years. **RESULTS:** We present our histological and endoscopic slides for review and discuss our findings in regards to the surgical management. **CONCLUSIONS:** Excision is the only palliative treatment, and the selected method should ensure preservation of vocal, respiratory, and protective functions of the larynx. It is the authors' belief that the Xomed shaver system demonstrates advantages over the CO2 system, which include a more complete and easier dissection, as well as the ability to remove larger samples of tissue for review by pathology.

## 11. Neuroendocrine Carcinoma: A Presentation of Five Cases

Ileana I. Enamorado, MD, Detroit, MI  
John F. Ensley, MD, Detroit, MI  
Omer I. Kucuk, MD, Detroit, MI  
George H. Yoo, MD, Detroit, MI  
Fulvio F. Lonardo, MD, Detroit, MI  
John R. Jacobs, MD\*, Detroit, MI

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to explain the origin of neuroendocrine carcinomas in the head and neck and understand the basis of their rarity in this area. The participants will know about the most common presenting signs and symptoms in the head and neck, the process of obtaining a diagnosis and the treatment options available.

**OBJECTIVES:** The objective of this presentation is to discuss the history and physical findings of five patients with neuroendocrine carcinoma. The histopathological features of each of the patients' tumors will be analyzed for specific markers and discussed. Another objective is to present a literature review of what is known to date about this entity in the head and neck, especially regarding treatment options for these patients. **STUDY DESIGN:** This is a case series of five patients diagnosed with neuroendocrine carcinoma of the head and neck. **METHODS:** Our pathology archives were revised for cases of neuroendocrine carcinoma of the head and neck diagnosed since the year 2000 to the present time. Five patients were identified. A retrospective chart review was performed and information about patient's demographics, presenting symptoms, physical findings and radiologic workup was recorded. Each of the patients' biopsy or surgical specimens were analyzed under light microscopy and immunohistochemistry was performed for adequate diagnosis. Treatment and follow-up information of each of these patients was also obtained. **RESULTS:** From the year 2000 until 2003, five patients were diagnosed with neuroendocrine carcinoma of the head and neck in our institution. The patients' ages ranged from 56 to 80 years old. The most common presentation was that of a mass in the larynx or tonsil causing respiratory obstruction. Most of the patients were smokers. All of the biopsy specimens were positive for neuron specific enolase. The patients were treated with a combination of surgery, radiotherapy and chemotherapy. **CONCLUSIONS:** Neuroendocrine carcinoma is a rare entity in the head and neck. The presentation is similar to its most common counterpart, the squamous cell carcinoma. Treatment strategies are still being devised to adequately address this disease.

## 12. Management of the Total Tympanic Membrane Perforation

Andrew J. Fishman, MD, New York, NY  
Michelle S. Marrinan, MD, New York, NY  
J. Thomas Roland, Jr, MD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss management techniques for the chronic otitis media patient with a total tympanic membrane perforation.

**OBJECTIVES:** The chronic otitis media patient with a total tympanic membrane perforation provides a challenge to the otologic surgeon. We have developed a specific surgical technique in an effort to enhance closure rate, improve hearing and minimize the need for revision surgery or postoperative management for mucosalization. This paper describes our current surgical technique and evaluates its efficacy in attaining these goals. **STUDY DESIGN:** Retrospective review. **METHODS:** A retrospective review was performed on all cases of a tertiary care public hospital otologic service from 1999 to 2003. Fifty cases were included in the study. Data was extracted for preoperative diagnosis, intraoperative findings, surgical technique, postoperative healing, presence or absence of mucosalization and need for further surgery. Preoperative and postoperative

audiograms were analyzed when available. **RESULTS:** The tympanoplasty technique includes complete removal of the tympanic annulus remnant followed by a double layer reconstruction of temporalis fascia as well as free postauricular skin "postage stamp" grafts and canal wall skin grafts. Patients with otorrhea receive a simple mastoidectomy with opening of the facial recess. Canaloplasty is performed in all cases. Silastic sheeting and nugauc packing aid in postoperative healing. Rate of closure was excellent without appreciable mucosalization of the tympanic membrane or external auditory canal skin. **CONCLUSIONS:** Tympanoplasty technique of temporalis fascia with skin graft overlay allows one stage closure of total perforations in the patient with chronic otitis media.

### 13. **WITHDRAWN--Imaging in Surgical Management of Parotid Masses**

Jason H. Franklin, MD FRCS(C), Toronto, ON Canada  
Jeremy L. Freeman, MD FRCS(C) FACS, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to 1) demonstrate specific clinical criteria which identify patients who require more extensive surgery for parotid masses; and 2) demonstrate the role of imaging in parotid surgery thereby preventing unnecessary imaging and identify patients who will benefit from imaging.

**OBJECTIVES:** To evaluate the usefulness of pre-operative CT or MRI scanning in surgical planning of parotid gland lesions. **STUDY DESIGN:** Retrospective review of consecutive patients presenting between January 1998 and January 2003 for surgical assessment of parotid masses. **METHODS:** Consecutive patients assessed for surgical management of parotid masses who had undergone imaging prior to referral to the treating surgeon were reviewed. On the basis of clinical criteria including high grade malignancy, nodal metastasis, facial nerve involvement, skin involvement, the necessary surgical procedure was determined for each patient independent of their imaging. The actual procedure performed with the result of the imaging study was documented and compared to the clinical assessment. Altered surgical approach was determined to be a procedure that would not have been done originally, without imaging. More extensive surgery includes; neck dissection, more extensive neck dissection, facial nerve sacrifice, skull base dissection or mandibular osteotomy. **RESULTS:** Consecutive patients between January 1998 and January 2003 with parotid gland masses and imaging prior to presentation to the treating surgeon were enrolled. No significant change in surgical approach was identified with the addition of imaging. The need for more extensive surgery was identified on the basis of clinical criteria rather than the findings on CT or MRI. **CONCLUSIONS:** In choosing the most appropriate surgical management of a parotid mass, clinical criteria can obviate the necessity for pre-operative imaging.

### 14. **Unusual Etiologies of Post-Tonsillectomy Hemorrhages**

Anne E. Getz, MD, Philadelphia, PA  
Wasył Szeremeta, MD, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the full differential diagnosis of post-tonsillectomy hemorrhages.

**OBJECTIVES:** To describe the etiologies and management of two unusual cases of post-tonsillectomy hemorrhages. **STUDY DESIGN:** Case review. **METHODS:** Post-tonsillectomy hemorrhage is a well recognized and significant complication. Most hemorrhage sources are identified with surgical reexploration and usually identifies discrete sources of bleeding from either tonsillar fossa. Factors linked to its occurrence have been reported to include patient age, sex, time of year of surgery, length of surgery, amount of blood loss, use of vasoconstrictors and steroids, and infectious etiology of tonsillar disease. We report two cases of post-tonsillectomy hemorrhage of unusual etiology. **RESULTS:** The first patient had a postoperative bleed secondary to a gastroesophageal stress ulcer which resolved with Ranitidine and Sucralfate. The second patient developed bleeding secondary to idiopathic thrombocytopenic purpura (ITP) and successfully treated with steroids and immunogenic therapy. No reports of ITP as a cause of post-tonsillectomy hemorrhage were identified by literature search. There is one report in the literature of a patient who presented with post-tonsillectomy hematemeses in which a delayed diagnosis of duodenal ulcer was made. The patient by history had no suggestion of peptic ulcer disease, and her only significant risk factor was a smoking history. No screening tool is available to assess for ITP, and only a positive history can elucidate peptic ulcer disease as a potential comorbidity. **CONCLUSIONS:** Great debate and investigation have ensued over the efficacy of preoperative screening for bleeding disorders prior to tonsillectomy. It is commonplace to obtain preoperative PT, PTT and CBC values. Both proponents and opponents of preoperative testing have made compelling articles in the literature. In our two cases, preoperative testing was of no value.

### 15. **Management of Intralabyrinthine Schwannomas**

Soha N. Ghossaini, MD, New York, NY  
Karen Lin, MD, New, NY (Presenter)  
Jack J. Wazen, MD\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to describe the symptoms, signs, radiographic findings, and management options for a patient with intralabyrinthine schwannoma.

**OBJECTIVES:** Intralabyrinthine acoustic schwannomas are rare tumors of the vestibular or cochlear nerves. Symptoms may mimic those of Meniere's Disease, resulting in incorrect diagnosis and management. The purpose of this study is to describe the presentation, radiographic findings, management options, and results in a series of four patients with a diagnosis of intralabyrinthine schwannoma. **STUDY DESIGN:** Retrospective chart review and literature review. **METHODS:** Three patients with intralabyrinthine schwannoma were identified. Age ranging from 38 to 63 years. There were 2 females and 1 male. Symptoms included episodic vertigo with nausea and vomiting lasting 4 hours, tinnitus, dysequilibrium, and rapidly progressive asymmetric sensorineural hearing loss. Magnetic resonance imaging revealed tumor isolated to the vestibule measuring 0.5 cm. A transmastoid/translabyrinthine approach was used to successfully remove the tumor. **RESULTS:** All patients had their neuroma totally excised. There were no complications. Histopathology was consistent with schwannoma. Following the surgery, all patients have anacusis in the operated ear and are free of vertigo and tinnitus at follow-up intervals of 1-7 years. There is no evidence of tumor recurrence. **CONCLUSIONS:** Due to the atypical presentation and location, these schwannomas may be easily overlooked by the radiologist and clinician. Accurate diagnosis is essential for optimal treatment that is further determined by tumor size and location.

### 16. **Jugular Venous Ectasia Can Mimic a Cystic Hygroma—Danger of Sclerotherapy**

Eric R. Grimes, MD, Philadelphia, PA  
Glenn C. Isaacson, MD\*, Philadelphia, PA  
Kristin L. Crisci, MD, Abington, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to recognize the clinical and radiologic similarities between cervical cystic hygromas and ectasias of the anterior jugular vein.

**OBJECTIVES:** To recognize the similarities between cervical cystic hygromas and ectasias of the anterior jugular vein and the differences in their management. **STUDY DESIGN:** Observational. **METHODS:** A five year old girl presented with a soft, bluish, non-tender neck mass that fluctuated in size. It was studied by color-flow Doppler ultrasonography, computed tomography, magnetic resonance imaging and histology. **RESULTS:** Ultrasonography revealed a solitary cystic lesion with a solid component and no evidence of blood flow. Computed tomography failed to demonstrate the lesion. Magnetic resonance imaging showed a fluid filled lesion with a solid component. Based on these findings the lesion was thought most consistent with a cystic hygroma. Sclerotherapy was considered, but surgical resection was ultimately elected. The lesion proved to be a vascular ectasia of the anterior jugular vein containing a thrombus. **CONCLUSIONS:** Sclerotherapy with OK 432 has been proposed as an alternative treatment for cystic hygromas. Care must be taken in the choice of this therapy and its application for a lesion lacking histologic confirmation prior to therapy.

**17. Pseudoaneurysms of the Superficial Temporal Artery—Treatment Options**

Glenn Isaacson, MD\*, Philadelphia, PA  
Polly S. Kochan, MD, Philadelphia, PA  
Jeffrey P. Kochan, MD, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to describe the clinical presentation and treatment options for pseudoaneurysms of the superficial temporal artery.

**OBJECTIVES:** Pseudoaneurysms of the superficial temporal artery may present as slowly growing facial masses. They may arise as a result of infection or autoimmune disease, but most commonly are sequelae of the blunt trauma. We describe their clinical presentation and differential diagnosis and present several treatment options. **STUDY DESIGN:** Observational case series. **METHODS:** We reviewed the presentations, diagnostic evaluations, and management in three young men who presented with pseudoaneurysms following trauma. These were compared to cases culled from a computerized review of the world's literature. **RESULTS:** Surgical resection, direct ligation, intravascular sclerosis, and coil embolization have all been used to treat these lesions. We treated two lesions by coil embolization and one by surgical resection. Long-term control was achieved in each case. **CONCLUSIONS:** Surgical resection cures pseudoaneurysms in most cases. The frontal and zygomatic branches of the facial nerve are at risk during this procedure. Local sclerosis is effective but may cause distal tissue necrosis. Coil embolization is highly effective and leaves no facial scar but carries the potential risks of stroke and lower extremity ischemia.

**18. Post-Operative Imaging and Follow-up of Vestibular Schwannomas**

Jon E. Isaacson, MD, Hershey, PA  
Wha-Joon Lee, MD PhD, Hershey, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to explain the different follow-up imaging algorithms used to track vestibular schwannoma patients post-operatively.

**OBJECTIVES:** No standards exist regarding patient follow-up after complete vestibular schwannoma (VS) resection. We queried neurotologists (NOs) and neurosurgeons (NSs) to determine practice patterns. **STUDY DESIGN:** A non-randomized sample of American Neurotology Society (ANS) and North American Skull Base Society (NASBS) members were surveyed via fax and email. **METHODS:** Surveys were faxed or emailed. Questions concerned years in practice, experience with VS surgery, and post-operative imaging algorithms given the scenario of complete gross tumor removal. Data were collected, tallied, and statistically analyzed. Items specifically addressed were number of post-operative magnetic resonance imaging scans (MRIs), timing of MRIs, timing of final MRI, timing of final visit, and variability between specialty. **RESULTS:** 498 surveys were sent and 135 were returned (27.1%). The average number of post-operative MRIs was 3.6 for NOs and 5.6 for NSs. This was statistically significant ( $p > .001$ ). There was no correlation between the number of MRIs and years in practice or tumor experience. Average length of follow-up varied from one year to lifetime but was most commonly five years and ten years. Seven of 84 NOs varied their post-operative imaging routine based upon surgical approach, but none of the NSs did. **CONCLUSIONS:** There remains no standard post-operative imaging algorithm for patients following VS resection.

**19. Congenital Cholesteatoma—An Unusual Location and Presentation**

Scharukh Jalisi, MD, Boston, MA  
Daniel J. Lee, MD, Worcester, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to demonstrate an understanding of the location, pathophysiology, and aberrant presentation of congenital cholesteatoma. To be able to include aberrantly located congenital cholesteatoma in the differential diagnosis of intracranial infections.

**OBJECTIVES:** To report an unusual location of congenital cholesteatoma in the temporal bone. **STUDY DESIGN:** Case report. **METHODS:** Prospective follow-up of patient presenting with sigmoid sinus thrombosis and headache. Surgical intervention revealed an unusual presentation of congenital cholesteatoma as the root of the patient's problems. **RESULTS:** Isolated congenital cholesteatoma of the mastoid tip which was non-contiguous with the rest of the middle ear or mastoid was noted. Cultures of purulence were positive for E. Coli and Diphtheroids. Surgical intervention was curative. **CONCLUSIONS:** Congenital cholesteatoma can occur in multiple locations. There are no previous reports about congenital cholesteatoma of the mastoid tip without extension from the middle ear. This is an unusual location of cholesteatoma and when infected even a small congenital cholesteatoma can cause serious problems.

**20. Calcific Tendonitis of the Longus Coli: Presentation, Evaluation and Management**

David A. Kieff, MD, Boston, MA  
Paul Caruso, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the presentation, evaluation and management of calcific tendonitis of the longus coli, as well as its differential diagnosis and pathognomonic radiographic features.

**OBJECTIVES:** To understand the presentation, evaluation and management of calcific tendonitis of the longus coli, as well as its differential diagnosis and pathognomonic radiographic features. **STUDY DESIGN:** Case series and literature review. **METHODS:** The medical records of a series of patients who presented with calcific tendonitis of the longus coli were reviewed to determine their presenting symptoms, signs, radiographic findings and disease course. The pathognomonic radiographic findings of calcific tendonitis are described. The differential diagnosis of torticollis and retropharyngeal swelling are discussed. The literature on calcific tendonitis is reviewed. **RESULTS:** Case study. **CONCLUSIONS:** Calcific tendonitis of the longus coli is a rare entity that is easily confused with an infectious cause of retropharyngeal swelling and torticollis in the clinical setting. However, it can be distinguished from infectious causes by pathognomonic radiographic findings. Calcific tendonitis of the longus coli responds rapidly to non-steroidal anti-inflammatory drugs, allowing the management of these patients in the outpatient setting.

**21. The Rare Presentation of MALT Lymphoma as a Soft Tissue Mass in the Temporal Region: A Case Series**

David A. Kieff, MD, Boston, MA  
Nancy Belanis, MD, Boston, MA  
Paul Caruso, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to recognize the importance of working up a soft tissue mass in the temporal region radiographically and histologically prior to treatment in selected instances when the mass is not typical of a lipoma on radiographic study. The participants should understand that MALT lymphoma can present in this unusual location, and appreciate its clinical, radiographic and histologic characteristics. They should also understand the treatment and course of MALT lymphoma.

**OBJECTIVES:** To provide an awareness of the very rare presentation of MALT lymphoma as a soft tissue mass in the temporal region of the face and to describe its imaging and histological characteristics, as well its management and disease course. **STUDY DESIGN:** Case series and literature review. **METHODS:** The medical records of two patients presenting with soft tissue masses in the temporal region of the face that subsequently were identified as MALT lymphoma were analyzed. The patients' presentations, evaluation and management and disease course are described along with the clinical, radiographic and histologic features of their lesions. The literature on MALT lymphoma in

the head and neck region is reviewed and discussed. **RESULTS:** Case series. **CONCLUSIONS:** MALT lymphoma presenting as a soft tissue mass in the temporal region of the face is extremely rare. Due to the proximity of the temporal branch of the facial nerve to deep soft tissue lesions in this location, radiographic imaging of the lesion is recommended prior to surgical treatment to localize the tissue plane of the mass. Lesions not displaying the typical imaging characteristics of a lipoma should be further evaluated by needle biopsy if possible to determine their histopathology prior to treatment. In the case of MALT lymphoma, the definitive treatment is non-surgical and necessitates a full body investigation to determine the primary site. This indolent tumor is often successfully managed by chemotherapy and/or radiation therapy.

## 22. **Topical Imiquimod 5% Cream for the Treatment of Atypical Verrucoid Lesion of the Nasal Skin**

David A. Kieff, MD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the role of topical imiquimod 5% cream in the treatment of skin lesions of the head and neck.

**OBJECTIVES:** To understand the role of topical 5% imiquimod in treating head and neck skin lesions and its advantages over ablative or excisional therapies in selected instances. **STUDY DESIGN:** Case report. **METHODS:** A patient referred by dermatology for excision of an atypical verrucoid keratosis of the nasal skin with indistinct margins was treated with topical 5% imiquimod cream every other day for 3 weeks. The lesion responded to treatment, and repeat biopsy of the site showed no residual lesion. The literature on the different applications of topical 5% imiquimod is reviewed and therapeutic applications of the medication are discussed. **RESULTS:** Case report. **CONCLUSIONS:** Topical 5% imiquimod cream is a new medication that can be used to treat lesions including keratoses, verrucous lesions, and basal and squamous cell carcinomata with success in selected instances. This form of therapy can be advantageous in treating specific lesions in certain locations of the head and neck skin that would otherwise require ablative or excisional therapy. In addition, this painless and nonsurgical modality allows treatment of these lesions in patients who are otherwise poor surgical candidates. Further study of this medication in treating head and neck skin lesions is warranted.

## 23. **Combined Sensorineural Hearing Loss and Aural Atresia: Issues in Cochlear Implantation**

Karen Lin, MD, New York, NY

Michelle S. Marrinan, MD, New York, NY

Noel L. Cohen, MD\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss cochlear implant candidacy and surgical management in patients with the combination of aural atresia, microtia, and profound sensorineural hearing loss.

**OBJECTIVES:** This paper presents the first report of cochlear implantation in a patient with congenital aural atresia, microtia, and bilateral profound sensorineural hearing loss. This rare combination requires special management considerations. Preoperative issues include thorough evaluation of CT and MRI scans to determine favorable anatomy, candidacy for cochlear implantation, and surgical planning. Intraoperative concerns include incision placement, approach to the middle ear, and abnormal facial nerve location. Postoperative device mapping and rehabilitation therapy are essential to facilitate speech and language development. **STUDY DESIGN:** Case report and literature review. **METHODS:** The patient's chart was reviewed for diagnostic studies, collaboration with radiologic and plastic surgery colleagues, operative strategy, and postoperative auditory stimulation. A literature review of aural atresia, microtia, and cochlear implantation was performed. **RESULTS:** A two-year-old male presented with bilateral aural atresia, microtia, and profound sensorineural hearing loss. Preoperative imaging studies revealed multiple abnormalities of the cochlea, vestibule, and internal auditory canal, all of which were more favorable on the right side. An incision to accommodate future microtia repair was designed in consultation with the patient's plastic surgeon. The middle ear was approached through the mastoid cavity, and the cochlear implant was placed without difficulty. Postoperative stimulation confirmed an auditory percept. **CONCLUSIONS:** This is the first report of cochlear implantation in a patient with bilateral aural atresia, microtia, and profound sensorineural hearing loss. Close collaboration among the otologist, neuroradiologist, and plastic surgeon is essential to coordinate surgical management and optimize cosmetic and functional outcomes in this unique population.

## 24. **Increasing Antibiotic Resistance of Streptococcus Species**

Karen Lin, MD, New York, NY

Arnold Komisar, MD, DDS\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the trend of increasing antibiotic resistance in streptococcus species frequently encountered by otolaryngologists. They will also be aware that alternative antibiotics used in cases of penicillin resistance may not be relied upon for treatment.

**OBJECTIVES:** Emerging penicillin-resistant streptococcal infections has resulted in increased utilization of valuable alternatives, including erythromycin and clindamycin. This study was undertaken to determine the magnitude of antimicrobial resistance to these antibiotics. **STUDY DESIGN:** See Methods. **METHODS:** A retrospective study of two streptococcal species isolates, streptococcus pneumoniae (168 specimens) and streptococcus pyogenes (135 specimens), collected between January 1, 2001 to January 1, 2002 at three academic institutions. The percentages of isolates resistant to penicillin, erythromycin, and clindamycin were calculated. **RESULTS:** 21-34% of S. pyogenes isolates were erythromycin-resistant, and 10-28% were clindamycin-resistant. None of the S. pyogenes isolates was resistant to penicillin. Of the S. pneumoniae isolates, 33-50% were resistant to erythromycin and 18-50% were resistant to clindamycin. The penicillin resistance rate was 0-45%. **CONCLUSIONS:** Our antimicrobial resistance rates for S. pneumoniae and S. pyogenes concur with and even exceeded national trends of increasing resistance. With a diverse population of over 8 million residents and high physician supply, our model is a microcosm for study of antimicrobial usage and susceptibility patterns.

## 25. **Medial Canal Fibrosis: Technique, Results and a Proposed Grading System**

Vincent Y.W. Lin, MD, Toronto, ON Canada

Gerard H. Chee, MD, Toronto, ON Canada

Joseph M. Chen, MD, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the pathology of medial canal fibrosis and our proposed method of severity grading (Grade I-III). Surgical technique as our results will also be discussed.

**OBJECTIVES:** To report the hearing and surgical results in patients with medial canal fibrosis (MCF). To describe the surgical technique for removal of MCF and to propose a classification for grading post-operative surgical outcome and to correlate this with hearing results. **STUDY DESIGN:** Retrospective case review. **METHODS:** Twenty-one patients with mature MCF underwent a total of 26 operations at our institution from February 1994 to June 2003. Four patients underwent surgery for bilateral disease and another had a second operation for recurrence. **RESULTS:** According to the proposed grading system, ten (38.5%) of the twenty-nine ears operated on achieved a Grade I result (normal self-cleaning ears) and three (11.5%) had recurrence (Grade III). One patient was found to have external ear canal cholesteatoma. Post-operatively, fifteen ears demonstrated a closure of air-bone gap to within 10dB or any improvements on 4 frequency average pure-tone audiogram (PTA) to better than 25dB. The mean pre-operative air-bone gap was 28.7 dB compared to 12.5 dB post-operatively (p<0.001). When hearing results were correlated with post-operative grade, 90.0% of the ears with a Grade I result had significant hearing improvement, 46.2% in patients with Grade II and 33.3% in patients with Grade III. Four patients complained of temporomandibular joint pain post-operatively. **CONCLUSIONS:** Surgery remains the treatment of choice for mature MCF. With proper surgical technique and meticulous post-operative care, a patent and functioning external ear canal can be achieved in a majority of patients. Absence of recurrence does not equate to improved hearing thresholds.

**26. Educational and Communicative Performance in Children with Cochlear Implants from Families in Which English is a Second Language**

Christopher J. Linstrom, MD\*, New York, NY  
Carol A. Silverman, PhD, New York, NY (*Presenter*)  
Janet R. Schoepflin, PhD, Garden City, NY (*Presenter*)  
Nancy S. Gilston, MA, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the roles of psychosocial factors (e.g., family constellation, family involvement, hearing status of siblings, parental English language proficiency, behavioral status, and familial socio-economic status) and device factors (e.g., age of implantation, number of bands outside the cochlea, internal and external component status, post-operative complications, and programming parameters) in the educational and communicative performance of children with cochlear implants from families in which English is a second language.

**OBJECTIVES:** The objectives were to examine, in children with cochlear implants from families in which English is a second language, the influence of psychosocial and device factors on 1) educational achievement, and 2) communicative performance. **STUDY DESIGN:** The study is a retrospective review of the otolaryngologic, audiology, speech-language, and educational records of all children who received cochlear implants at our hospital, who were from families in which English is a second language, and for whom at least 24 months of post-operative follow-up was available. **METHODS:** This retrospective review yielded five children who met the criteria for study inclusion. The classification variables included psychosocial and device factors. The outcome measures were communicative performance and educational achievement. **RESULTS:** In 40%, speech represented the main mode of communication. Psychosocial factors associated with good oral communication included a two-parent family constellation, at least one parent with good English proficiency, absence of behavioral problems, and strong family involvement. Sixty percent were judged to have good educational achievement; these had at least one parent with good English proficiency. Other psychosocial and all device factors were non-predictive of educational and communicative outcomes. **CONCLUSIONS:** Parental English proficiency influences both oral communication proficiency and educational achievement for these five children who received cochlear implants at a late age and who were from families for whom English is a second language. The intersubject variability of the influence of all device and some psychosocial factors on the outcome measures was striking.

**27. The Role of Fiberoptic Laryngoscopy in Smoke Inhalation Injury**

Dilip Madnani, MD, Bronx, NY  
Natalie P. Steele, MD, Bronx, NY  
Egbert J. de Vries, MD, Bronx, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to explain the role of fiberoptic laryngoscopy for smoke inhalation victims in the emergency room setting.

**OBJECTIVES:** Fiberoptic laryngoscopy is routinely used in the evaluation of smoke inhalation victims, but the evidence to support its use is controversial. We reviewed our experience in order to determine if fiberoptic laryngoscopy is necessary in the initial evaluation of smoke inhalation victims in order to predict which patients will require endotracheal intubation. **STUDY DESIGN:** Retrospective chart review. **METHODS:** The charts of forty eight smoke inhalation victims seen in the emergency room by the otolaryngology service from 1998-2003 were reviewed retrospectively. Physical and fiberoptic examination findings and the need for intubation were documented. Statistical analysis was performed to assess the correlation between physical and fiberoptic exam findings and endotracheal intubation. **RESULTS:** Of the forty-one patients included in this study, only seven patients required endotracheal intubation. The physical examination findings of soot in the oral cavity, facial burns and body burns positively predicted the need for intubation. True and false vocal cord edema, as documented on fiberoptic laryngoscopy, also predicted the need for intubation. However, only one patient without the aforementioned physical exam findings had documented airway edema on fiberoptic laryngoscopy and required intubation. **CONCLUSIONS:** Early identification of smoke inhalation victims who will require intervention is crucial. While fiberoptic laryngoscopy is a useful tool to assess the need for endotracheal intubation, it is not a necessary procedure in the initial evaluation. Its use is still supported, however, in those patients whose physical exam findings predict the need for intubation.

**28. Familial Non-Medullary Thyroid Cancer: A Matched-Case Control Study**

Evelyn Linda Maxwell, AB MD+, Toronto, ON Canada  
Francis T. Hall, MbChB FRACS, Toronto, ON Canada  
Jeremy L. Freeman, MD FRCSC FACS, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the incidence and clinical presentation of familial non-medullary thyroid cancer. The participant should be able to compare familial cases to sporadic cases of well differentiated thyroid cancers and discuss the clinicopathological characteristics and survival outcome of familial non-medullary thyroid cancer.

**OBJECTIVES:** Differentiation of sporadic non-medullary thyroid cancers and familial thyroid cancer based on clinicopathological characteristics, management and survival outcome. **STUDY DESIGN:** A retrospective single center case-control study. **METHODS:** All cases of sporadic and familial non-medullary thyroid cancer diagnosed and/or treated between 1963 and 2000 were identified and compiled. A familial case was defined as a patient with well differentiated thyroid cancer and at least one first-degree relative with a histopathologically proven non-medullary thyroid cancer. Twenty-four FNMTC cases were identified amongst a total database of 542 cases of well differentiated thyroid cancer. Clinicopathological features, management and outcome were compared. **RESULTS:** The unmatched control and case groups were compared and analyzed statistically using t Test, Phi test, Cramer's V test, Pearson and Spearman correlation tests. FNMTC patients did not have significantly different exposure to radiation, tumor size or surgical management of disease. Twenty-four patients with FNMTC were matched to twenty-four controls based on age, gender, stage of disease at presentation and tumor size; the matched groups were analyzed statistically using a matched-proportional z test. Finally, disease-specific survival was analyzed using log-rank test and the Kaplan-Meier method. A p value < 0.05 was considered statistically significant. Despite, FNMTC being significantly more multifocal, there was no significant difference in disease-specific survival. **CONCLUSIONS:** Although FNMTC is characterized by multifocality, these patients do not experience significantly worse outcome compared to their sporadic counterparts.

**29. Post-Obstructive Pulmonary Edema Following Laryngospasm in the Otolaryngology Patient**

Vishvesh M. Mehta, MD, Brooklyn, NY  
Gady Har-El, MD\*, Brooklyn, NY  
Nira A. Goldstein, MD, Brooklyn, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to distinguish and understand the diagnosis of post-obstructive pulmonary edema, type I and II.

**OBJECTIVES:** Post-obstructive pulmonary edema (PPE) is an uncommon complication which develops immediately after the onset of acute airway obstruction such as laryngospasm or epiglottitis (type I) or after the relief of chronic upper airway obstruction such as adenotonsillectomy (type II). The objectives of this study are to describe the development of type I PPE following laryngospasm in pediatric and adult patients undergoing otolaryngologic surgical procedures other than those for treatment of obstructive sleep apnea. **STUDY DESIGN:** Retrospective case series of 13 otolaryngology patients from 1995 to 2003. Tertiary care teaching hospital and its affiliates. 13 patients (4 children, 9 adults, 5 males, 8 females) ranging in age from 9 months to 48 years. **METHODS:** Retrospective chart review of diagnosis, treatment, and outcomes. **RESULTS:** Operative procedures included adenoidectomy, tonsillectomy, removal of an esophageal foreign body, microlaryngoscopy with papilloma excision, endoscopic sinus surgery,

septorhinoplasty, and thyroidectomy. 6 patients required reintubation. Treatment varied but included positive pressure ventilation, oxygen therapy, and diuretics. Six patients were discharged within 24 hours and the others were discharged between 2 and 6 days postoperatively. There were no mortalities. **CONCLUSIONS:** Laryngospasm resulting in PPE occurs in both children and adults after various otolaryngologic procedures. Our study is the first to report its occurrence in healthy children without sleep apnea undergoing elective surgery.

**30. Laryngeal Findings in Users of Combination Corticosteroid and Bronchodilator Dry Powder Inhalational Therapy for Asthma**

Natasha T. Mirza, MD, Philadelphia, PA  
Sandra A. Schwartz, MS, Philadelphia, PA  
Danielle A. Antin-Ozerkis, MD, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to 1) describe the laryngeal findings in patients who use combinational therapy for asthma; 2) discuss the mechanism of laryngeal irritation from the use of inhalers; and 3) describe mechanisms for reducing laryngeal irritation and secondary dysphonia from the use of inhalers.

**OBJECTIVES:** To describe laryngeal findings and voice changes in patients who are started on combination corticosteroid and bronchodilator therapy in the form of a dry powder inhaler (DPI). **STUDY DESIGN:** Retrospective, single subject design. **METHODS:** Retrospective review of 10 consecutive patients, meeting inclusion criteria, who presented at the voice center with more than 4 weeks of dysphonia after being started on a combination form of asthma medication for control and maintenance therapy. All patients were nonsmokers and without history of previous identification or excision of vocal pathology. All patients were treated previously with PPI for GER/LPR. Laryngeal videostroboscopic evaluations were performed on all patients. Patients were asked to complete a questionnaire regarding their perceived voice change and history of medical maintenance for asthma. **RESULTS:** Dysphonia was present in the patients selected for greater than 4 weeks. Patients had been switched to combination therapy after previously using traditional two drug asthma regimens. In 6/10 patients, the vocal folds demonstrated areas of erythema with plaque-like changes on the surface mucosa. Reduced amplitude of vibration and a reduction in mucosal wave propagation was present on videostroboscopy. Questionnaires revealed that all patients were initiated on combination DPI treatment within the last one year. **CONCLUSIONS:** Dysphonia caused by change in surface mucosa is a side-effect from the use of DPI therapy for asthma. The high impact force during inhalation of the medication and carrier leads to deposition of particles in the upper airway. We feel the extent of mucosal irritation can be minimized by patient education in the proper delivery of DPI. In some cases, however, return of the two medications delivered separately was necessary. The irritation of the laryngeal mucosa and return of normal vibratory parameters occurred in all patients.

**31. Ossicular Prosthesis Dislodgment in a Human Cadaveric Temporal Bone Model**

Darryl T. Mueller, MD+, Philadelphia, PA  
Peter L. Rigby, MD, New Orleans, LA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to explain our temporal bone model of ossicular prosthesis dislodgment and discuss its clinical application.

**OBJECTIVES:** To create a human cadaveric temporal bone model for ossicular prosthesis dislodgment. **STUDY DESIGN:** Randomized prospective trial. **METHODS:** A total ossicular replacement prosthesis (TORP) was positioned into the middle ear of a fixed human temporal bone via a middle fossa approach after removal of the incus and stapes superstructure. The rate of dislodgment of the TORP was determined for four temporal bone orientations by dropping the temporal bone from heights of 0.125, 0.25, 0.50, and 1.0 meters. An accelerometer bolted to the temporal bone was used to estimate deceleration upon impact. Chi square analysis was performed to evaluate significant difference in dislodgment rate at each height between the four temporal bone orientations. **RESULTS:** A rate of dislodgment of 70% at 0.50 meters and 15% at 0.25 meters was measured for rostral impact. Rates of dislodgment for occipital, lateral, and pedal impact were 100% at 0.50 meters and 50-80% at 0.25 meters. Rostral impact was significantly different from all other impact directions (p value=0.0123). Deceleration upon impact was 144g at 0.50 meters and 79g at 0.25 meters, which is equivalent to a fall from less than 1 meter onto a rigid surface without absorption of the fall by soft tissue or facial skeleton. **CONCLUSIONS:** This initial model demonstrates that a TORP can be dislodged in a reproducible manner. The current design applies to the immediate post-operative period, prior to tissue ingrowth. Future modification of this model will allow stability comparison of different prostheses and ossiculoplasty techniques during this period.

**32. Inferior Turbinectomy in Conjunction with Septodermoplasty for HHT Patients**

Davis B. Nguyen, MD, New Haven, CT  
Douglas A. Ross, New Haven, CT

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss current and newer surgical treatments for HHT patients.

**OBJECTIVES:** Hereditary hemorrhagic telangiectasia (HHT) is a disorder mainly manifested by epistaxis. Although septodermoplasty remains the gold standard of treatment, some authors advocate the application of inferior turbinectomy. We present a modified technique in which we combine septodermoplasty with inferior turbinectomy. We hypothesized that this approach would have two advantages: 1) addressing the telangiectasia problem on the turbinates; and 2) providing more surface area for the skin graft to epithelize upon. **STUDY DESIGN:** Inferior turbinectomy in conjunction with septodermoplasty was performed in seven patients in a prospective study. All patients had a long history of severe HHT. **METHODS:** The parameters evaluated were: 1) bleeding, 2) breathing, 3) sense of smell, 4) synechia formation, and 5) atrophic changes such as dryness, crusting, rhinorrhea, or foul odor in the nose. **RESULTS:** With an average follow-up of six months, patient evaluation of the outcome parameters was as follows: 1) bleeding: 100% of patients reported significant improvement; 2) breathing: 100% of patients reported significant improvement; 3) sense of smell: 71% of patients reported significant improvement; 4) synechia formation: 100% of patients revealed patent airways; and 5) atrophic changes: 0% of patients reported dryness, 28% of patients reported crusting, 14% of patients reported rhinorrhea, and 28% of patients reported foul odor in the nose. **CONCLUSIONS:** Inferior turbinectomy in conjunction with septodermoplasty is a new modified technique for HHT patients that results in excellent control of bleeding. While also improving nasal breathing and sense of smell, there are no major problems with atrophic rhinitis.

**33. Silent Sinus Syndrome: Diagnosis, Pathophysiology, and Surgical Treatment**

William A. Numa, MD, Boston, MA  
Daniel R. Gold, MD, Boston, MA  
Donald J. Annino, MD DMD, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to enumerate the entities that can cause asymptomatic enophthalmos. Moreover, participants will be able to understand and explain the silent sinus syndrome's pathophysiology, as well its radiographic findings, surgical goals, techniques, and pitfalls to avoid in its treatment.

**OBJECTIVES:** This presentation is carried out in an effort to describe an uncommon entity with its pathophysiology and treatment options. 1) Review the etiology and pathophysiology of silent sinus syndrome; 2) overview of its differential diagnosis including radiological characteristics; 3) treatment goals; 4) techniques for treatment; and 5) pitfalls to avoid. **STUDY DESIGN:** Case study. **METHODS:** Case study and literature review. **RESULTS:** A thirty-three year old male presents with a complaint of recent onset, progressive "sinking right eye". Denies trauma or sinonasal symptoms. On examination, the patient has severe enophthalmos and lagophthalmos with normal visual acuity. CT reveals implosion of the right maxillary sinus and depression of the orbital floor. Patient undergoes operative orbital reconstruction with good result. **CONCLUSIONS:**

Otolaryngologists treating patients with sinonasal disease can expect to encounter a subset of patients who present with orbital complications. A few patients can have structural orbital changes associated with maxillary atelectasis. The silent sinus syndrome has been described as progressive enophthalmos and hypothalamus in the presence of chronic maxillary sinus involvement, secondary to the gradual collapse of the orbital floor. The globe sinks with the orbital floor creating the characteristic enophthalmos and hypothalamus. The treatment of this entity is aimed at correcting the problems leading to its development, as well as surgically reestablishing normal orbital anatomy.

**34. Early Postoperative Outcomes in Elderly Head and Neck Cancer Patients**

Miriam A. O'Leary, MD, Farmington, CT  
Jeffrey D. Spiro, MD\*, Farmington, CT

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to better understand the peri-operative risks associated with performing head and neck cancer resections on elderly patients.

**OBJECTIVES:** To evaluate the short-term outcome of head and neck surgery in patients 80 years of age or older. **STUDY DESIGN:** Retrospective chart review. **METHODS:** A prospectively maintained surgical database was used to identify consecutive patients 80 years of age and older who underwent head and neck cancer surgery at a university-affiliated hospital between 1988 and 2002. A retrospective analysis of short-term outcome was then performed. **RESULTS:** During the study period 46 patients age 80 or older underwent 54 procedures. There were no peri-operative deaths. Major postoperative complications occurred in four cases (7.4%), however pre-operative co-morbidities were not predictive. Minor complications occurred after 20 procedures (37%). Living situations were assessed in 42 cases and eight patients (19%) were discharged to an increased level of care. **CONCLUSIONS:** This study demonstrated a low incidence of major complications that is not significantly different from that reported for younger patients. In this series, preoperative health was not a predictor of postoperative outcome. A significant minority of patients was discharged to an increased level of care that was likely to be long term. Therefore, while patients 80 years of age and older fared well overall during their hospitalization, their borderline preoperative functional status and lack of social support leave them vulnerable to significant changes in quality of life postoperatively.

**35. Expression of the Antiapoptotic Gene Survivin in Medullary Thyroid Carcinoma**

James P. O'Neal, MD+, Danville, PA  
Phillip K. Pellitteri, DO\*, Danville, PA  
David J. Carey, PhD, Danville, PA  
Timothy L. Lindemann, MD, Danville, PA  
Patrick C. Barth, MD, Danville, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the role of the antiapoptotic gene survivin in apoptosis and its potential relevance to the pathogenesis and treatment of medullary thyroid carcinoma.

**OBJECTIVES:** Apoptosis plays an important role in cellular homeostasis and embryonic development. Suppression of apoptosis is an important mechanism for carcinogenesis as well as for resistance to radiotherapy and chemotherapy. Survivin is a recently discovered antiapoptotic protein that inhibits activated caspase-3 and caspase-7, two prominent effectors in the distal portion of the complex apoptotic protease cascade. Survivin has been shown to be expressed in thymus, placenta and fetal tissues but is unique among known apoptosis inhibitors in that it is down-regulated in adult tissue. Medullary thyroid carcinoma is a neuroendocrine tumor of the parafollicular cells of the thyroid gland. Thyroidectomy with lymph node dissection is the primary treatment modality, however, prognosis in many instances remains uncertain. The goal of this study is to determine whether medullary thyroid carcinoma expresses survivin. **STUDY DESIGN:** In vitro examination of survivin expression in two independent human medullary thyroid carcinoma cell lines. **METHODS:** Survivin expression in human medullary thyroid carcinoma cell lines TT and DRO81-1 was ascertained by Western Blot analysis for survivin protein and reverse transcriptase PCR for survivin mRNA expression. **RESULTS:** Both TT and DRO81-1 were found to express survivin mRNA and protein. **CONCLUSIONS:** This study is the first to provide evidence that medullary thyroid carcinoma expresses the antiapoptotic protein survivin. Survivin has been shown to convey resistance to chemotherapy and radiotherapy and the selective expression of survivin in neoplastic tissue offers a potential therapeutic target for medullary thyroid carcinoma.

**36. The Role of Parotidectomy in the Surgical Management of Advanced Auricular Malignancies**

Ryan F. Osborne, MD, Los Angeles, CA  
Hootan Zandifar, MD, Syracuse, NY (Presenter)  
Young J. Kim, MD, Los Angeles, CA  
Thomas C. Calcaterra, MD\*, Los Angeles, CA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the role of using parotidectomy in managing patients presenting with localized auricular malignancies.

**OBJECTIVES:** Auricular malignancies are typically managed with wide local resection of the primary mass. Depending upon the clinical setting, radiation therapy may be utilized as a primary mode of treatment or it may be used as an adjuvant treatment. While small lesions of the auricles are easily amenable to surgical excision, large tumors may require an extensive resection including total auriculectomy, temporal bone resection, neck dissection, and/or parotidectomy. What is lacking in the literature is a definitive study that demonstrates the necessity of a parotidectomy in the context of advanced auricular cancer without clinical evidence of parotid involvement. Case records of patients with advanced auricular malignancies were reviewed and analyzed for any histopathologic evidence of neoplastic cells in the parotid specimen. **STUDY DESIGN:** This study is a retrospective ten year chart review analysis of subjects with the diagnosis of auricular carcinoma who required a total auriculectomy. **METHODS:** Case records of 15 patients with advanced auricular carcinomas were reviewed. All patients underwent parotidectomy in conjunction with a total auriculectomy. **RESULTS:** Analysis showed that there was no histological evidence of metastatic carcinoma in those patients who underwent parotidectomy. **CONCLUSIONS:** Parotidectomy may not be necessary in the surgical management of advanced auricular carcinoma in the absence of clinically positive parotid disease.

**37. Lag Screw Fixation in Midface Fractures**

Edmund A. Pribitkin, MD, Philadelphia, PA  
David M. Cognetti, MD, Philadelphia, PA (Presenter)  
Stephen N. Marshall, BSN, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to demonstrate the use of lag screw fixation in midface fractures.

**OBJECTIVES:** To demonstrate how lag screw fixation may be used to effectively treat obliquely oriented maxillary, zygomatic and orbital rim fractures. **STUDY DESIGN:** Case series. **METHODS:** Analysis of case series through medical record review. **RESULTS:** Lag screw fixation of midface fractures has been overshadowed by other readily available plate fixation techniques. Nonetheless, lag screw fixation provides quick, stable and effective reduction of obliquely oriented maxillary, zygomatic and orbital fractures without risk of plate exposure and with potentially superior primary osteosynthesis. **CONCLUSIONS:** Lag screw fixation remains an excellent alternative to plate fixation techniques in the repair of appropriate midface fractures.

**38. Presentation and Management of Laryngeal Neurofibromatosis**

Reza Rahbar, MD DDS, Boston, MA  
Biana G. Litrovnik, BA, Boston, MA (*Presenter*)  
Roger Nuss, MD, Boston, MA  
Trevor T. McGill, MD, Boston, MA  
Gerald B. Healy, MD\*, Boston, MA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to: recognize and diagnose laryngeal neurofibromatosis through history, physical exam and radiological studies, entertain differing treatment plans, arrive at the appropriate treatment for their patient.

**OBJECTIVES:** To review the presentation of laryngeal neurofibromatosis and present guidelines for its management. **STUDY DESIGN:** Retrospective study (March 1973-January 2003). **METHODS:** A retrospective study of five cases of laryngeal neurofibromatosis, treated at a tertiary pediatric medical center from 1973 through 2003, was performed. Recorded data included the child's age at initial presentation, sex, symptoms, significant medical and family history, preoperative imaging findings, site of the tumors, surgical procedures, intraoperative findings, complications, functional results, and recurrence. **RESULTS:** The patients included 4 females (80%) and 1 male (20%). The five patients presented with stridor and café-au-lait spots at birth or shortly after. All patients were diagnosed with neurofibromatosis by the diagnostic criteria. Studies evaluating the disease process included plain radiography, CT, MR, barium swallow, and laryngoscopy and bronchoscopy under anesthesia. Biopsies were obtained for all patients which confirmed neurofibroma. Treatments included: tracheotomy (N=4), CO<sub>2</sub>-laser excision (N=4), modified neck dissection (N=3), partial pharyngectomy (N=1), and supraglottic laryngectomy with cricopharyngeal myotomy (N=1). Three patients were successfully decannulated. Follow-up ranged 4 to 23 years. One patient was lost to follow-up. **CONCLUSIONS:** Neurofibroma of the larynx is a rare condition that should be considered in the differential diagnosis of children with a submucosal laryngeal mass. Complete surgical excision is the treatment of choice in cases of localized small lesions. To prevent aggressive debilitating surgery, partial excision may be preferable in cases of larger lesions infiltrating the surrounding soft tissues. Long-term follow-up of these patients is essential due to the possibility of malignant transformation.

**39. Development and Validation of the VHI-10**

Clark A. Rosen, MD, Pittsburgh, PA  
Annie S. Lee, MS, Pittsburgh, PA (*Presenter*)  
Thomas G. Zullo, PhD, Pittsburgh, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand why the use of the VHI-10 is comparable to the VHI.

**OBJECTIVES:** To compare an abbreviated voice handicap assessment instrument (VHI-10) to the Voice Handicap Index (VHI). **STUDY DESIGN:** Item analysis of the VHI in individuals without voice disorders and patients with voice disorders. **METHODS:** Clinical consensus review of the VHI items was held to prioritize the clinical value of the each VHI items (30 total). Item analysis of the VHI was then performed using the VHI responses of 100 patients with voice problems and 159 control subjects. The ten most robust VHI items were selected using the item analysis and clinical consensus results to form the VHI-10. Statistical analysis to compare the validity of the VHI-10 to 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 0.90 (p=0.01). The ratio 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. **CONCLUSIONS:** The VHI-10 is a powerful representation of the VHI, and thus can replace the VHI as an instrument to quantify patients' perception of their voice handicap.

**40. Avoiding Pitfalls with Maxillary Sinus Hypoplasia (MSH)**

B. Todd Schaeffer, MD, New Hyde Park, NY  
Michael Setzen, MD, Manhasset, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the relationship of the maxillary sinus ostia and the lateral wall when draining a sinus with MSH through the natural middle meatus. The potential pitfalls of performing surgery with MSH will be explained and the relative anatomy will be discussed.

**OBJECTIVES:** Prevention of orbital penetration when performing endoscopic sinus drainage through the middle meatus with an opacified sinus with MSH. Understanding the comparative anatomy of the ostia, infundibulum, uncinata and orbit are explained. **STUDY DESIGN:** Retrospective chart review of four patients who required endoscopic sinus surgery with an opacified MSH. **METHODS:** Endoscopic sinus surgery with angled telescopes and ostium ball seekers to better visualize the lateral wall anatomy is required to optimize visualization of the middle meatus. **RESULTS:** Successful opening and drainage of an opacified sinus through the natural ostia was accomplished in four patients with MSH. **CONCLUSIONS:** Understanding the variant anatomy of an opacified maxillary sinus with MSH will alert the surgeon of the potential of orbital penetration when performing endoscopic sinus drainage through the middle meatus. Using angled telescopes and ostium ball seekers will help prevent penetration of the orbit.

**41. Free Air in the Fascial Planes of the Head and Neck**

Joshua L. Scharf, MD, Philadelphia, PA  
Ahmed M. S. Soliman, MD, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to: 1) identify the common causes of free air in the fascial planes of the head and neck; 2) understand the clinical presentation and radiologic findings of free air in the head and neck; and 3) understand the management of free air in the head and neck.

**OBJECTIVES:** Free air in the deep fascial planes of the head and neck is a rare presentation with many different etiologies. We present a series of six patients who were evaluated by the otolaryngology service with a diagnosis of free air in the head and neck and inferior extension. A review of the presentation, radiographic findings, etiology, and management, as well as a literature review, will be discussed. **STUDY DESIGN:** Retrospective review. **METHODS:** Evaluation of the presentation, radiologic studies, management, etiology of each of the six subjects were reviewed, as well as a world literature review. **RESULTS:** In each case, different etiologies were discovered, as well as different clinical presentations. **CONCLUSIONS:** Free air in the fascial planes of the neck can be caused by many different causative factors, and appropriate management can prevent potentially serious complications.

**42. Intracranial Involvement of Chronic Invasive Fungal Sinusitis Controlled by Craniotomy in an Immunocompetent Host**

Joshua L. Scharf, MD, Philadelphia, PA  
Ahmed M. S. Soliman, MD, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to: 1) identify clinical and radiographic findings of invasive fungal sinusitis; 2) understand basic diagnosis and management of invasive fungal sinusitis; and 3) identify potential complications of invasive sinusitis.

**OBJECTIVES:** Invasive fungal sinusitis is a disease entity more commonly seen in immunocompromised, debilitated patients. The disease process may be difficult to treat, progressing rapidly and proving to be fatal in some cases. We present a case of chronic invasive fungal sinusitis with intracranial extension in a 33 year old African American

male with a history of sarcoid and chronic renal insufficiency, who presented with a nine month history of progressive nasal obstruction and three week history of progressive left eye proptosis. Diagnosis was made based upon clinical presentation, radiologic imaging, culture and histological examination. The patient underwent multiple surgical procedures and was treated with systemic antifungal medication. **STUDY DESIGN:** Observational study. **METHODS:** Evaluation and review of clinical, radiologic, intraoperative findings, with a world review of literature. **RESULTS:** Treatment was initiated after nasal endoscopy and biopsy were performed. The patient was treated with intravenous amphotericin, and left and right endoscopic ethmoidectomy, sphenoidectomy, frontal recess exploration, and septoplasty were performed. One week post operatively, the patient underwent a bifrontal craniotomy with frontal exenteration and epidural abscess debridement. Post-operative cultures were negative. There was no CSF leak or mental status changes throughout the hospital course. Outpatient therapy with amphotericin was continued after discharge. On follow-up, there was no evidence of recurrent fungal disease. **CONCLUSIONS:** Chronic invasive sinusitis may affect patients with an intact host defense, and complications can include intracranial involvement. In this case, successful treatment involved surgical and medical management.

#### 43. A Case Report: Ectopic Thymic Carcinoma

Nicole A. Schrader, MD, Philadelphia, PA  
Kai K. Ni, MD, Philadelphia, PA  
Daniel J. Kelley, MD, Salisbury, MD

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants will have a basic understanding of thymic carcinoma, including techniques for diagnosis and importance of classification.

**OBJECTIVES:** This report discusses a case of thymic carcinoma occurring in an atypical location with a review of the current literature. **STUDY DESIGN:** This is a case report. **METHODS:** A 56 year old female was referred to our office with a five-month history of dysphagia and a left-sided 4cm X 4cm neck mass under the sternocleidomastoid muscle. The initial CAT scan demonstrated a large heterogeneous mass adjacent to the left thyroid lobe. The patient then underwent complete excision of the mass and a modified neck dissection. Cytogenic and immunohistochemical evaluation revealed neoplastic cells positive for epithelial markers cytokeratin (AE1/AE3) and CD5 molecule. **RESULTS:** The histomorphology in conjunction with the immunohistochemical profile was highly suggestive for poorly differentiated carcinoma of thymic origin. Thymic carcinoma is a rare neoplasm that usually presents as an anterior mediastinal mass with aggressive histologic appearance and clinical course. The classification of thymic epithelial neoplasms, which includes benign and malignant thymomas and thymic carcinomas, has been a controversial issue in tumor pathology because of the variety of histomorphologic types. In the past, thymic carcinoma was often confused with malignant thymoma and metastatic tumors from other sites because of its heterogeneous histology and several microscopic subtypes. Recent developments in immunohistochemistry for cytokeratin and CD5 expression provide greater accuracy in the diagnosis of thymic cancer. **CONCLUSIONS:** Advancement in immunohistochemistry staining proved to be quite useful in confirming the diagnosis of this rare neoplasm found in an atypical location.

#### 44. Neuroendocrine Adenoma of the Middle Ear Causing Recurrent Facial Nerve Paralysis

Jerome S. Schwartz, MD, Brooklyn, NY  
Jing Cai, MD, Brooklyn, NY  
Neil M. Sperling, MD, Brooklyn, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the clinical presentation, radiographic and histologic features, and treatment options for patients with neuroendocrine adenomatous tumors of the middle ear and mastoid.

**OBJECTIVES:** To review the clinical features and histopathologic variation of middle ear adenomatous tumors. We add a clinical case to supplement the literature. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** Clinical data review of pathologic, radiographic, and audiologic examinations. **RESULTS:** A 64 year old female was referred to our urban tertiary care center for her third episode of facial paralysis in 3 years. Steroid and antibiotic treatment failed to resolve the patient's facial nerve condition. A temporal bone CT scan revealed left epitympanic and mastoid soft tissue opacification, with erosion of the facial nerve canal and horizontal semicircular canal. Urgent tympanomastoidectomy with resection of the middle ear contents revealed an adenomatous tumor with neuroendocrine differentiation. We review the literature and discuss the current concepts of diagnosis and management of this uncommon temporal bone tumor. **CONCLUSIONS:** Adenomatous tumors of the middle ear and mastoid are extremely rare. Clinical features can mimic that of other middle ear neoplasms, as well as chronic otomastoiditis. In most cases, the diagnosis of middle ear adenoma becomes apparent only after surgical exploration. As the histologic morphology alone can be nonspecific, immunohistochemical analysis has played an important role in the diagnosis. Positive staining for cytokeratins and chromogranin help differentiate this group of tumors from other temporal bone neoplasms. Histologically they have been linked to carcinoid tumors but appear to differ in their clinical behavior. Definitive treatment has not been established. Complete surgical resection with close post-operative follow-up for local recurrence appears prudent.

#### 45. Targeted Parathyroid Resection for Adenoma

Jerome S. Schwartz, MD, Brooklyn, NY  
Krishnamurthi Sundaram, MD, Brooklyn, NY  
Antonio E. Alfonso, MD, Brooklyn, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to demonstrate that a positive preoperative localizing study together with a frozen section diagnosis of adenoma allows for resection of a single parathyroid gland without routine biopsy of a second gland.

**OBJECTIVES:** To determine whether a localizing preoperative imaging study together with intraoperative frozen section diagnosis of adenoma allows for single gland resection with resolution of hyperparathyroidism. **STUDY DESIGN:** Retrospective case review at our tertiary care referral center. **METHODS:** The study protocol included 64 adults between the ages of 18 and 84 who underwent parathyroidectomy for primary hyperparathyroidism suspicious for adenoma. MRI or sestamibi radionuclide scans were performed on all patients for preoperative localization. Targeted surgical resection with frozen section diagnosis was performed on all patients. Single gland excision alone was performed in the majority of cases. Postoperative serum calcium levels were recorded. **RESULTS:** Preoperative imaging studies suggested a region suspicious for adenoma in 92% of patients. In 85% of targeted resections, a single gland alone was submitted for pathologic frozen section diagnosis. Of these cases, 88% of the frozen section diagnoses were consistent with adenoma, while the remainder were verified as parathyroid tissue with permanent sectioning required for diagnosis. Of single gland resections, without additional gland biopsy for pathologic confirmation, 98% of patients became either hypo- or eucalcemic in the early post-operative period. **CONCLUSIONS:** The extent of surgical exploration and biopsy for parathyroid adenoma is controversial. Preoperative localization studies may minimize the extent of dissection, thereby reducing operative time and patient morbidity. A frozen section diagnosis of adenoma and a glandular weight of greater than 600 mg may allow for single gland excision without the additional biopsy of a normal gland, as evidenced by early postoperative resolution of hypercalcemia.

#### 46. Accommodating Teenagers

Nicole C. Sislian, MA, New York, NY  
Jane R. Madell, PhD, New York, NY  
Ronald A. Hoffman, MD\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to better understand how a self-mapping technique may maximize cochlear implant use in the adolescent population.

**OBJECTIVES:** As cochlear implantation becomes more universally accepted as a means of auditory habilitation, an increasing number of teenagers are undergoing cochlear implantation. Implant centers must create specific protocols for dealing with teenagers. We have developed a modification of mapping technique that engenders teenage participation and empowerment. **STUDY DESIGN:** Patients were MAPPED using two different techniques to arrive at maximum comfort level; the conventional audiologist controlled method and the self-MAPPING technique. Programs made using these two techniques were compared in terms of speech perception scores and preference. **METHODS:** The self-MAPPING process works as follows. Threshold levels are set by the audiologist. The teenager is then given instructions on how to set their own comfort levels for each electrode, with the keyboard or control knob. An ascending technique is used and the child raises the level until it becomes loud but not uncomfortable. The child does not look at the computer screen while MAPPING. A MAP is made using these levels. The audiologist then resets the comfort levels creating a second map. These two new maps are randomly placed in Program 1 or Program 2 in the patient's processor. Speech perception testing is performed with each MAP. The teen is asked which program s/he prefers on the day of MAPPING and is asked to try both MAPs at home for one month and report back which one is preferable. **RESULTS:** Preliminary data indicates that teens tolerate increased stimulation when they control the MAPPING, demonstrate improved speech perception, and prefer the sound quality of the self-MAP. **CONCLUSIONS:** We introduce this technique designed for teenagers to reduce fear and anxiety and provide them with an increased sense of empowerment and control.

**47. Narrowing of the Optic Canal in Fibrous Dysplasia Can Be Safely Managed by Optic Nerve Decompression**

Clementino A. Solares, MD, Cleveland, OH  
Francis A. Papay, MD, Cleveland, OH

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the pathophysiology of concentric narrowing of the optic canal in fibrous dysplasia and compare the safety of surgical optic nerve decompression with expectant management.

**OBJECTIVES:** The optic nerve passes through the sphenoid lesser wing and can be encased by fibrous dysplasia (FD) that may lead to loss of vision. The management of FD involving the optic nerve canals, particularly in patients without clinical signs of optic neuropathy and a normal vision, is controversial. Both prophylactic decompression of the optic nerve and observation with regular ophthalmologic evaluations have been proposed in asymptomatic patients. Our objective was to demonstrate that concentric narrowing of the optic canal in FD can be safely managed by optic nerve decompression. **STUDY DESIGN:** Retrospective case series. **METHODS:** Ten patients who underwent prophylactic optic nerve decompression for FD performed by one surgeon at a tertiary care center between 1990 and 2003 were included. Surgery was performed for severe dystopia and deformity. Optic nerve decompression was performed since the surgical field presented an adequate approach to the optic canal. **RESULTS:** There were 10 patients in our cohort, ranging from 7 to 28 years. All patients underwent transcranial optic canal nerve decompression before clinical signs of severe visual loss or optic neuropathy and orbital reconstruction with split rib and/or cranial bone grafts. Postoperative follow-up did not reveal disturbances in visual function, extraocular motility, or evidence of CSF fistulas. Ophthalmologic follow-up ranged from 1 to 13 years. **CONCLUSIONS:** The management of optic canal narrowing in FD remains controversial. Early, radical resection of FD involving the optic canal can be safely performed and may prevent visual loss. We advocate for surgical management of these patients as the natural history of the disease is unknown.

**48. Use of Brachytherapy with Modified Neck Dissection: An Organ Preserving Management for Oropharyngeal Cancer**

Yung H. Son, MD, New Haven, CT  
Jen Y. Chow, MD, New Haven, CT (Presenter)  
Douglas A. Ross, MD, New Haven, CT  
Clarence T. Sasaki, MD\*, New Haven, CT

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the efficacy of brachytherapy and modified radical neck dissection as a treatment modality which preserves function in oropharyngeal tumors.

**OBJECTIVES:** To examine the risks and benefits of organ preserving management for patients with primary oropharyngeal tumors. **STUDY DESIGN:** A retrospective analysis of 72 patients with base of tongue (39 patients) or tonsil (33) tumors treated using 103-labeled palladium (103Pd) or 125-labeled iodine (125I) brachytherapy (BT) combined with modified radical neck dissection and followed by adjunctive external beam radiation therapy (EBRT). TNM stage range included T1-3 and N0-3, with 13 patients having stage I or II and 59 patients having stage III or IV oropharyngeal cancer. Median follow-up was 42 months, with Kaplan-Meier analysis of sixty month survival. **METHODS:** Between 1980 and 2003, patients underwent endotracheal anesthesia without tracheostomy, modified radical neck dissection, and either 103Pd or 125I brachytherapy. A transoral or suprahyoid submental approach for BT was employed, with single or multiple seed(s) per penetration. The volume dose range was between 20-40 mCi, with implanted tumor dose of 30-60 Gy. EBRT dose was 52-58 Gy. **RESULTS:** Sixty month disease free survival was observed in 87% of patients with tonsil cancer and 73% of those with base of tongue cancers. Local/regional failure occurred in just 6% of our cohort, while distant metastases were found in 14% and a second primary was found in 4%. **CONCLUSIONS:** Brachytherapy with modified radical neck dissection and adjunctive EBRT provides excellent locoregional control without surgical resection of the primary tumor in base of tongue or tonsillar cancer. No significant toxicity or morbidities were noted to be associated with this treatment. Notably, the functional integrity of the oropharynx is preserved.

**49. The Role of Sclerotherapy in Hemangioma Treatment**

Christopher S. Song, MD, Brooklyn, NY  
Andrew C. Goldman, MD, Brooklyn, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the usefulness of preoperative sclerotherapy in the treatment of a late involuting hemangioma.

**OBJECTIVES:** Hemangiomas are the most common benign neoplasm of infancy, and a majority of these lesions will present in the head and neck region. Involution of the hemangioma usually begins within the first year of life. Late-involuting, or persistent, hemangiomas may require surgical excision. The usefulness of preoperative sclerotherapy in the treatment of a late-involuting hemangioma is examined. **STUDY DESIGN:** We report on a patient with a late-involuting lower lip hemangioma presenting with a functional and cosmetic impairment. A review of the pertinent literature is included for discussion. **METHODS:** Presentation of a case with preoperative and postoperative photographs, intraoperative records and histopathological findings after preoperative injections of sodium morrhuate. **RESULTS:** A small reduction in hemangioma volume was noted after repeat sclerotherapy treatments. More significantly, the sclerotherapy facilitated an easier surgical excision with a greatly reduced intraoperative blood loss. Evidence of perivascular fibrosis was observed upon histopathologic review. **CONCLUSIONS:** Preoperative sclerotherapy treatment with sodium morrhuate may diminish intraoperative blood loss and may improve speed and accuracy of the surgical excision.

**50. Hashimoto's Thyroiditis: Confounding the Diagnosis of Thyroid Cancer**

Phillip C. Song, MD, New York, NY  
Elena P. Opher, MD, New York, NY  
Arnold Komisar, MD DDS\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to describe the various clinical and pathologic traits of Hashimoto's disease that complicate the workup of thyroid nodules leading to thyroid surgery.

**OBJECTIVES:** Our objective was to illustrate how the clinical, cytologic and pathologic characteristics of Hashimoto's disease affected the workup leading to thyroid surgery

in our institution. **STUDY DESIGN:** Five year retrospective chart review with review of available cytologic and pathologic materials. **METHODS:** We utilized a computer aided retrospective review of all thyroid specimens that were diagnosed with Hashimoto's disease over 5 years. We reviewed the pathologic and cytologic data available in this population in order to examine the impact of needle aspiration on thyroid surgery. **RESULTS:** Out of a total 665 thyroidectomy specimens reviewed, 44 (8%) specimens had evidence of Hashimoto's disease. Seven out of 44 specimens had concurrent papillary carcinoma. Cytology was available on 21 specimens. Comparison of cytology and pathology data showed that many features suggestive of malignancy on fine needle aspiration such as nuclear grooves, nuclear inclusions, atypical cells, hurthle cells, and groups of follicular cells were found. **CONCLUSIONS:** Multiple cytologic and histologic features present in Hashimoto's thyroiditis can lead to suspicious findings on fine needle aspiration. Advance knowledge of this condition is important for the clinician and patient in the discussion leading up to thyroid surgery.

**51. Recurrent Periorbital Cellulitis: An Unusual Clinical Entity**

Alexander Sorin, MD, New York, NY  
Max M. April, MD, New York, NY  
Robert F. Ward, MD\*, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the various etiologies of recurrent periorbital cellulitis and a strategy for managing this rare disorder.

**OBJECTIVES:** To describe our experience and a treatment strategy for managing patients with recurrent periorbital cellulitis. **STUDY DESIGN:** Retrospective chart review and review of literature. **METHODS:** Retrospective chart review of the surgical practice of four otolaryngologists with a combined 40 year experience revealed six patients with recurrent periorbital cellulitis (RPOC). Inclusion criteria were at least three episodes affecting the same side, with interval quiescent periods of complete resolution. All patients had a history of recurrent episodes over the course of at least one year. Complete response was defined as no evidence of recurrence at a minimum of one year. **RESULTS:** The etiologies of RPOC were as follows: 1) three patients developed symptoms due to underlying paranasal sinusitis—two of the patients resolved with antibiotic therapy and one required sinus surgery for definitive management; 2) one patient exhibited vesicular RPOC that was cultured positive for HSV-1 and treated medically with antiviral therapy; 3) one patient had allergic contact dermatitis use of cosmetic make-up; and 4) one patient was found to be malingering by means of subcutaneous self-injection of a cutaneous irritant. **CONCLUSIONS:** While periorbital cellulitis is a commonly encountered and readily treatable condition, recurrent periorbital cellulitis is rare and difficult to manage. In our experience, the etiology of recurrence varied, but resolution was achieved by means of a comprehensive clinical assessment and appropriately tailored medical or surgical management.

**52. Zygomatic Abscess as a Sequelae of Mastoiditis**

Gangadhar S. Sreepada, MD, Newark, NJ  
Huma A. Quraishi, MD, Newark, NJ  
Daniel I. Plosky, BA, Newark, NJ

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to explain the etiology, presentation, diagnosis, and treatment of a zygomatic abscess secondary to mastoiditis.

**OBJECTIVES:** In 1908, Friedrich Bezold described three intratemporal routes of abscess formation—the mastoid subperiosteal abscess, Bezold's abscess from the medial mastoid process, and the rare zygomatic abscess that perforates through the zygomatic root. Obstruction of the aditus ad antrum inhibits drainage of the mastoid cavity, leading to extratemporal spread and abscess formation. Only three cases of zygomatic abscess have been reported in the English literature. We present a fourth case. **STUDY DESIGN:** Case report. **METHODS:** A six year old female with no prior medical or otologic history presented with a left preauricular mass. CT imaging revealed a four centimeter multiloculated abscess over the left zygomatic arch and temporomandibular joint with a defect of the underlying outer cortex of the zygomatic root accompanied by middle ear and mastoid opacification. **RESULTS:** The patient underwent incision and drainage of the abscess and an ipsilateral myringotomy that revealed a mucoid effusion. Her fevers resolved and her overall condition improved. However, some inflammation remained. A simple mastoidectomy was performed and diffuse granulation tissue was found to obstruct the aditus ad antrum. Biopsies revealed chronic inflammation. Cultures from both procedures showed anaerobic Fusobacterium species and streptococcus intermedius. Intravenous antibiotics and oral antibiotics were given for a total of four weeks post-operatively. **CONCLUSIONS:** Though extremely rare, zygomatic subperiosteal abscess can be a complication of mastoiditis, particularly when the aditus ad antrum is obstructed. CT imaging is diagnostic and led to institution of appropriate treatment. Incision and drainage, simple mastoidectomy, and antibiotics resulted in rapid improvement in the condition of the patient.

**53. Dizziness and Anxiety: Course of Illness Affects Treatment Outcome**

Jeffrey P. Staab, MD, Philadelphia, PA  
Michael J. Ruckenstein, MD\*, Philadelphia, PA

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to 1) recognize three patterns of illness in patients with chronic dizziness and anxiety; and 2) understand the effect that these patterns of illness have on the response to treatment.

**OBJECTIVES:** We previously identified three patterns of illness in patients with chronic dizziness and anxiety: 1) primary neurotologic conditions triggering secondary anxiety disorders; 2) neurotologic conditions exacerbating pre-existing anxiety; and 3) anxiety disorders alone causing dizziness. We also reported that serotonergic antidepressants (SSRIs) are effective for this patient population. The present study investigated the hypothesis that the course of illness described by these diagnostic categories affects the robustness of response to SSRI treatment. **STUDY DESIGN:** Retrospective review of all patients (N=88) with chronic dizziness and anxiety treated with SSRIs for at least eight weeks at a tertiary care, balance center from 1998–2003. **METHODS:** All patients underwent comprehensive neurotologic and psychiatric evaluations prior to receiving a SSRI according to an established treatment protocol. Patients with active physical neurotologic conditions received concomitant treatment for their medical illness. Those without active neurotologic conditions were tapered from all otologic medications. Patients were included in the analysis only if they were treated by the authors with a SSRI for at least 8 weeks or proved intolerant to SSRIs. Outcome was measured using the Clinical Global Impressions – Improvement Scale. **RESULTS:** Patients with primary neurotologic conditions triggering secondary anxiety disorders and those with primary anxiety disorders alone had a more complete response to SSRI treatment than patients who had neurotologic conditions superimposed on pre-existing anxiety ( $p<0.05$ ). Rates of SSRI intolerance were similar across all groups. **CONCLUSIONS:** SSRIs are effective for patients with chronic dizziness and anxiety. However, patients with clinically significant anxiety predating neurotologic illness may require more intensive interventions.

**54. Pediatric Hemophilic Pseudotumor of the Paranasal Sinus**

Natalie P. Steele, MD, New Hyde Park, NY  
David Myssiorek, MD, New Hyde Park, NY  
Gerald D. Zahtz, MD, New Hyde Park, NY  
Alan Diamond, MD, New Hyde Park, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the differential diagnosis of expansile paranasal sinus masses, including hemophilic pseudotumors. The pathophysiology, treatment and operative complications of hemophilia will also be reviewed within the context of otolaryngology.

**OBJECTIVES:** Hemophilic pseudotumors are rare clinical entities in the otolaryngology field. An unusual case of a pediatric hemophilic pseudotumor of the paranasal sinus in a previously undiagnosed hemophiliac is presented. **STUDY DESIGN:** Case report. **METHODS:** A six month old otherwise healthy boy was admitted for evaluation of a rap-

idly expanding left cheek mass. The patient's initial presentation, imaging workup, intraoperative and postoperative courses are discussed. **RESULTS:** Imaging workup revealed a large, heterogeneous, dense lesion within the left maxillary sinus with distortion of the orbital floor and hard palate. Due to the concern for an aggressive malignancy, a biopsy was performed. After a Caldwell-Luc approach, a large amount of greenish fluid leaked from an otherwise empty maxillary sinus. The patient continued to bleed from his intraoral incision postoperatively and required two packed red blood cell transfusions. Subsequent hematologic testing led to a diagnosis of severe Hemophilia A with factor VIII levels less than one percent of normal. After treatment with recombinant coagulation factors, hemostasis was achieved and the patient clinically improved. **CONCLUSIONS:** This is the first report of a pediatric hemophilic pseudotumor arising in the paranasal sinuses leading to a diagnosis of hemophilia. It is a rare entity characterized by a cycle of repeated hemorrhage with subsequent encapsulation of the coagulum, leading to pressure induced distortion of adjacent bone. In the correct clinical setting, hemophilic pseudotumor should be considered in the differential diagnosis of a rapidly expanding mass.

**55. Patient Controlled Comparison of Flexible Endoscopic Evaluation of Swallowing with Sensory Testing (FEESST) and Videoesophagram**

Abtin Tabae, MD, New York, NY  
Kevin Kalwerisky, BS, New York, NY (*Presenter*)  
Rosemary B. Desloge, MD FACS, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to demonstrate the comparable predictive value of flexible endoscopic evaluation of swallowing with sensory testing (FEESST) and videoesophagram (VE).

**OBJECTIVES:** Current objective modalities of dysphagia evaluation include the VE, FEESST and modified barium swallow (MBS). While previous studies have demonstrated that the predictive values of the MBS and FEESST are comparable, the predictive value of VE has not been adequately studied. **STUDY DESIGN:** Retrospective review at a tertiary care medical center. **METHODS:** Demographics and findings on FEESST and VE were reviewed for patients who received both examinations within a two week period between the years 2001 and 2002. The results of both tests were compared with respect to swallowing function. **RESULTS:** The VE and FEESST data of 30 patients met inclusion criteria and were reviewed. The mean age was 72 (range 31-97) and 73% of patients were male. 57% of patients were considered at high risk for aspiration pre-evaluation and had not been feeding by mouth (NPO). When FEESST was performed with pureed food consistencies, pooling was noted in 83%, penetration in 60% and aspiration in 40%. Based on the FEESST evaluation, 35% of patients who had been NPO were advanced to oral feeds. In contrast, 38% of patients who had previously been feeding orally were made NPO. When VE was performed with various materials, pooling was noted in 57%, penetration in 67% and aspiration in 57%. A comparison of FEESST and VE for our cohort revealed full agreement between the two studies in 40% of the patients, minor disagreement in 27% and major disagreement in 33%. **CONCLUSIONS:** FEESST and the VE are not comparable objective studies of dysphagia.

**56. Respiratory Retraining Therapy in the Treatment of Refractory Cough in Patients with Paradoxical Vocal Fold Movement Disorder**

Abtin Tabae, MD, New York, NY  
Jonathan E. Aviv, MD\*, New York, NY  
Thomas Murry, PhD, New York, NY

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to demonstrate the efficacy of respiratory retraining therapy in the treatment of refractory cough in patients with paradoxical vocal fold movement disorder.

**OBJECTIVES:** To describe a case series of patients with refractory cough and paradoxical vocal fold movement disorder treated with respiratory retraining therapy. **STUDY DESIGN:** Case series in a tertiary medical care center conducted during 2003. **METHODS:** Four patients were identified with refractory cough and paradoxical fold movement disorder as defined by a greater than 50% reduction in airway during inspiration on transnasal fiberoptic laryngoscopy. All patients were treated with greater than 6 months of maximal proton pump inhibitor therapy with improvement in reflux symptoms but persistent cough. Patients were subsequently treated with respiratory retraining therapy and were asked to subjectively rate the frequency and severity of cough at the conclusion of therapy. All patients underwent pulmonary function testing (PFT) prior to and after therapy. **RESULTS:** There were 3 females and 1 male and the age range was 42 to 67 years. All patients had normal forced vital capacity (FVC) and forced expiratory flow (FEF) but decreased forced inspiratory volume over forced inspiratory vital capacity at 0.5 seconds (FIV 0.5/FIVC) prior to starting therapy. Patients received 2-7 sessions of therapy over a 3-8 week period and all patients subjectively described an improvement in the frequency and severity of their cough. Transnasal laryngoscopy demonstrated improvement paradoxical vocal fold movement and PFTs showed improvement in the FIV 0.5/FIVC. **CONCLUSIONS:** Patients with refractory cough in the absence of pulmonary disease should be evaluated for paradoxical vocal fold movement disorder. Respiratory retraining therapy may represent effective therapy.

**57. Antenatal and Postnatal Management of Oral Lesions Interfering with Feeding and Breathing**

Henri C. Tannas, MD, Boston, MA  
Kenneth M. Grundfast, MD\*, Boston, MA  
Scott R. Schoem, MD, Hartford, CT  
Mitchell M. Kolker, MD, Hartford, CT

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the diagnosis and management of oral lesions in the infant that interfere with breathing and feeding.

**OBJECTIVES:** To demonstrate both antenatal and postnatal methods of managing congenital oral lesions. **STUDY DESIGN:** Case series. **METHODS:** Review of presentation, surgical management and histopathology. **RESULTS:** Three cases are presented. The first, diagnosed prenatally with ultrasound, is a congenital ranula that pushed the tongue up against the palate and out from the mouth. This cyst was excised by ex utero intrapartum treatment (EXIT) approximately one hour after birth. After extubation, the infant encountered discoordination-feeding problems lasting 3 weeks and then did well. The second case is an infant with a ventral tongue and floor of mouth lesion discovered at birth. Despite repeated aspirations, the cyst rapidly re-expanded to reach a size of 3 cm x 3 cm causing feeding and swallowing difficulty. At three months of age, the cyst was excised from the ventral tongue surface via an intraoral approach using nasotracheal intubation. Histopathologic findings were not consistent with any of the known categories of congenital oral cavity cysts such as ranula, dermoid, or lymphatic malformation. The third case is an infant with a ventral tongue lesion present since birth measuring 1.5 cm x 1.5 cm causing feeding and sleeping difficulty. A 'trilobate multilocular cystic lesion' was excised via an intraoral approach using nasotracheal intubation. **CONCLUSIONS:** A congenital floor of mouth cysts (FOMC) is not always a ranula. This report reviews problems in clinical and pathologic diagnosis of FOMC's. Keys to successful management are timing of surgical interventions, nasotracheal intubation during and following surgery, and anticipating post-operative tongue edema.

**58. Bone Conduction Hearing and the Occlusion Effect in Otosclerosis and Normal Controls**

Vance C. Tsai, MD+, Toronto, ON Canada  
Joseph M. Chen, MD, Toronto, ON Canada  
Mark S. Korman, MD, Toronto, ON Canada

**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the different postulated mechanisms of bone conduction and how these produce the occlusion effect and lateralization of the Weber test.

**OBJECTIVES:** The exact mechanisms of bone conduction (BC) and how these relate to lateralization of the Weber test have been debated for over a century. The goal of this study was to better understand bone conduction (BC) hearing in subjects with normal hearing and those with otosclerosis through the occlusion effect and how this relates to

the Weber test. **STUDY DESIGN:** There are three accepted theories defining bone conduction hearing: compressional BC implies direct basilar membrane vibration, inertial BC implies vibration of the ossicles, and osseotympanic BC implies vibration of the tympanic membrane and para-auditory tissues. **METHODS:** 20 normal volunteers and 17 unilateral otosclerosis patients underwent external canal sound pressure level (SPL) measurement during BC testing using a standardized bone oscillator placement and stimulation paradigm. Sound was detected with a probe microphone placed in the external auditory canal in unoccluded and occluded conditions following a 50 dBHL BC stimulus. **RESULTS:** There was a significant difference in SPL between otosclerosis and normal subjects when the external auditory canals were occluded (18.5 dB vs. 8.5 dB). Without occlusion, SPL increased in both groups, however without any significant statistical difference. **CONCLUSIONS:** All three mechanisms of BC play a role in our results. Sound measured in the external canal likely represents energy from inertial and osseotympanic BC. Occluding the ear leads to sound trapping and amplification. Increased middle ear compliance in otosclerosis patients results in increased impedance mismatch and the significantly increased occlusion effect. Our data suggests that lateralization and the Weber effect are thus likely due to osseotympanic BC.

**59. Laryngeal Compromise After Inhalation Injury**

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**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to understand the pathophysiology of inhalation injuries and its different manifestations on the upper respiratory tract.

**OBJECTIVES:** The effects of inhaled gasses and heat in burn patients can result in severe inflammation of the airway which may lead to permanent hoarseness and laryngo-tracheal strictures. This process is often worsened by the need for endotracheal intubation in these patients. We present a series of 9 patients followed for six months after their injury with emphasis on their respiratory, voice and swallowing function. **STUDY DESIGN:** Prospective study. **METHODS:** 9 patients sustaining inhalation injury requiring intubation and/or tracheotomy for respiratory compromise were followed for 6 months after their injury. Serial bronchoscopy evaluations were performed to assess their airway prior to extubation. Videostroboscopy and evaluation of their swallowing function were performed on all patients. Patients with abnormal findings were reevaluated at 3 month intervals with videostroboscopy to monitor changes. **RESULTS:** 9 patients (7 females and 2 males) were evaluated after sustaining inhalation injury. All patients underwent at least one videostroboscopy evaluation. Four patients with hoarseness required more than one videostroboscopy examination. One patient required direct laryngoscopy and excision of a large subglottic granuloma which presented with obstructive symptoms. One patient presented with persistent aspiration was found to have unilateral vocal cord fixation. Two patients with only complaints of hoarseness were found to have absence of mucosal wave on videostroboscopy exam with severely scarred vocal cords. **CONCLUSIONS:** Thermal or chemical inhalation in burn victims can result in injury to laryngeal structures. Endotracheal intubation can aggravate the inflammatory response and predispose to formation of granulation tissue and scarring. A multidisciplinary approach involving pulmonary specialists, speech pathologists and otolaryngologists is necessary for adequate management of these patients.

**60. DAP-Kinase Promoter Methylation in Parotid Squamous Cell Carcinoma**

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**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to demonstrate a mechanism of tumor suppressor gene inactivation in a highly malignant head and neck tumor.

**OBJECTIVES:** To evaluate methylation status of DAP-kinase (Death Associated Protein Kinase) promoter in a highly aggressive, metastatic tumor. Based on the putative mechanism of DAP kinase function, tumors with loss of DAP-kinase would be expected to exhibit increased metastatic potential. **STUDY DESIGN:** We sought to analyze methylation status of a tumor suppressor gene, DAP-kinase, in a case of parotid squamous cell carcinoma (SCC). This tumor is known for its aggressive growth and ominous prognosis. Cervical metastases are present in half of the cases. Despite aggressive surgical resection and radiation treatment, 5 year survival was reported to be only 21%. Therefore, we selected SCC of the parotid as a model of an aggressive and highly metastatic SCC. **METHODS:** We analyzed methylation status of DAP-kinase promoter region by methylation specific PCR. **RESULTS:** Analysis of T3 N1 SCC of the parotid gland by methylation specific PCR showed positive methylation of the DAP-kinase gene, while no gene methylation was detected in normal parotid tissue. **CONCLUSIONS:** Methylation of the DAP-kinase gene was previously detected in many types of advanced and highly metastatic tumors. DAP-kinase has been implicated as a tumor suppressor gene, preventing tumors from metastasizing by promoting apoptosis triggered by cell detachment. Inactivation of the DAP-kinase gene by promoter methylation positively correlated with advanced stage head and neck SCC. The infrequency of the tumor precludes the possibility of a statistically valid study of this neoplasm. However, the presence of DAP-kinase gene inactivation is consistent with the aggressive presentation of parotid SCC and its high rate of lymph node metastasis.

**61. Radiation Recall Dermatitis**

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**EDUCATIONAL OBJECTIVE:** At the conclusion of this presentation, the participants should be able to discuss the diagnosis and management of radiation recall dermatitis of the face.

**OBJECTIVES:** Evaluate the diagnosis and management of radiation recall dermatitis of the face. **STUDY DESIGN:** Case report. **METHODS:** A 28 year old white male received radiation therapy (6000cGy in 30 fractions) for stage IV nasopharyngeal carcinoma over a 7 week period with complete resolution of disease. Approximately 1.5 years after radiotherapy the patient presented to the ER complaining of pain and redness in the area of the radiation portals. He was admitted for the treatment of periorbital cellulites secondary to acute sinusitis. Over the next 8 years the patient was admitted on 11 separate occasions with the same diagnosis. **RESULTS:** During most of these admissions, CT scans showed no signs of sinusitis and the CBC was normal. MRI demonstrated no recurrence of malignancy. **CONCLUSIONS:** Radiation recall dermatitis can be misdiagnosed as periorbital cellulites secondary to acute sinusitis. Unnecessary hospital admissions and inappropriate treatment can result from the failure to consider the diagnosis of radiation recall dermatitis.