

# **2008 EASTERN SECTION PROGRAM**

**JANUARY 25-27, 2008  
SHERATON PHILADELPHIA, PHILADELPHIA, PA**

## **25<sup>th</sup> Friday January**

4:00 - Speaker Ready Room - Salon 2  
8:00

5:00 - Registration - Liberty Foyer  
8:00

6:00 - President's Welcome Reception - Horizons Rooftop  
7:30 pm Ballroom

## **26<sup>th</sup> Saturday January**

7:00 - Business Meeting (Members Only) - Salon 3-4  
7:50 Breakfast with Exhibitors - Liberty A

7:00 - Exhibit Hall Open - Liberty A  
4:00

7:00 - Speaker Ready Room - Salon 2  
5:00

7:00 - Registration - Liberty Foyer  
5:00

9:00 - Spouse Hospitality - Salon 6  
11:00

8:00 - Scientific Sessions - Liberty B  
5:20

8:00 Welcome and Introduction of President, Harold C. Pillsbury, MD\*, Chapel Hill, NC  
Lanny Garth Close, MD\*, New York, NY

8:10 Presidential Address  
Workforce Issues in Otolaryngology-Head & Neck Surgery

\* Denotes Fellow

Harold C. Pillsbury, MD\*, Chapel Hill, NC

**8:20 Introduction of Guests of Honor and Citation Winners**

**Guests of Honor**

Howard W. Smith, DDS MD\*, New York, NY

David T. Chiu, MD, New York, NY

Helmuth Goepfert, MD, Houston, TX

**Vice-Presidential Citation**

Bobby R. Alford, MD\*, Houston, TX

**8:35 Introduction of Keynote Speaker, Richard Axel, MD, New York, NY**

Lanny Garth Close, MD\*, New York, NY

**8:40 Keynote Speaker**

**Scents and Sensibility: A Molecular Logic of Olfactory Perception**

Richard Axel, MD, New York, NY - 2004 Nobel Prize winner in Medicine

**MODERATOR**

**William J. Richtsmeier, MD PhD\*, Cooperstown, NY**

**9:30 FIRST PRIZE - RESIDENT RESEARCH AWARD**

**Desirudin Reduces the Rate of Microvenous Thrombosis in a Rat Model**

*Carol M. Lewis, MD MPH, Boston, MA*

*Daniel G. Deschler, MD, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to explain the mechanism of action of direct thrombin inhibitors, and understand how they have potential efficacy in patients undergoing free tissue transfer based on findings in an in vivo rat model.

**Objectives:** In an effort to evaluate pharmacologic agents for optimal anticoagulant prophylaxis in patients undergoing free tissue transfer, we evaluated the efficacy of desirudin, a recombinant hirudin that acts as a direct thrombin inhibitor, using a rat model of microvenous thrombosis. **Study Design:** Randomized, blinded study using an in vivo rat model of microvenous failure. **Methods:** Thirty-two rats received either desirudin or saline in a randomized, blinded fashion one-half hour prior to performance of a standardized thrombogenic procedure on rat femoral veins. Bleeding time, vessel patency, and presence of clot within the anastomosis were subsequently assessed. Appropriate statistical analyses were then performed. **Results:** There was a significant increase in vessel patency in rats treated preoperatively with desirudin as compared to controls receiving saline (96.9% vs 53.1%, p=0). In evaluating patent vessels for nonoccluding clot 41.2% of control rats had nonobstructive clot at the site of anastomosis versus 3.2% of rats treated with desirudin (p=0.002). Bleeding times were longer in desirudin treated rats than those that received saline (7.17 +/- 3 minutes vs 5.15 +/- 1.2 minutes, p=0.027). **Conclusions:** The use of preoperative desirudin increases the rate of microvascular anastomotic patency, decreases the occurrence of nonoccluding clot, and increases bleeding time in an in vivo rat model, indicating potential efficacy in patients undergoing microvascular free tissue transfer.

---

**9:38 Staging and Survival Analysis for Nonsquamous Cell Carcinomas of the Larynx**

*Harrison W. Lin, MD, Boston, MA*

*Neil Bhattacharyya, MD\*, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the factors impacting survival for patients with nonsquamous cell carcinoma of the larynx and compare the survival of these patients versus patients with conventional squamous cell carcinoma of the larynx.

**Objectives:** Determine staging and comparative survival for nonsquamous cell carcinoma (non-CC) of the larynx. **Study Design:** Cross-sectional population analysis. **Methods:** Cases of non-SCC supraglottic, glottic and subglottic cancers were extracted from the Surveillance, Epidemiology and End Results database (1988-2003) and the staging distribution computed. For each site Kaplan-Meier survivals were compared according to histology, T-stage and N-stage. Survival for non-SCC cancers for each site were compared among histologies, T stage and N-stage as well as to age/gender/stage matched SCC cancers to determine differences in survival. **Results:** 175 supraglottic non-SCC cases were identified (67% male, mean age 62.2

years) consisting of 35 basaloid squamous, 25 neuroendocrine, 25 small cell, and 22 lymphomas (among others) with mean survivals of 31.2, 44.8, 52.1 and 80.5 months respectively. Survival was not significantly different according to histology (log-rank,  $p=0.520$ ) but was significantly different according to T-stage ( $p=0.005$ ) and N-stage ( $P=0.003$ ). 90 glottic non-SCC cases were identified (83% male, mean age 66.8 years) consisting of 27 spindle cell, 18 sarcoma, 12 basaloid squamous and 10 small cell (among others) with mean survivals of 114.6, 89.8, 50.9 and 39.2 months respectively. Survival was not significantly different according to histology ( $p=0.075$ ) but was significantly different according to T-stage ( $p<0.001$ ) and N-stage ( $p=0.011$ ). Small numbers (34) precluded survival analysis for subglottic cases. For both supraglottic and glottic sites including all histologies survival was similar for matched non-SCC and SCC cases ( $p=0.448$  and  $p=0.927$  respectively). **Conclusions:** Non-SCC are more common in the supraglottic larynx. T-stage and N-stage influence survival more than histology alone for these cancers.

---

**9:46      A Novel Approach for Dilation of Neopharyngeal Stricture following Total Laryngectomy Using Tracheoesophageal Puncture Site**

*Joshua B. Silverman, MD PhD, Boston, MA*  
*Daniel G. Deschler, MD FACS, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss factors influencing the occurrence of both cervical esophageal and neopharyngeal strictures, compare treatment options for neopharyngeal strictures following total laryngectomy, and explain various surgical techniques that can successfully be used to dilate these strictures.

**Objectives:** Neopharyngeal and cervical esophageal stricture are known late complications of the multidisciplinary management of head and neck cancer, specifically laryngeal and hypopharyngeal cancer. Surgical options for treatment of neopharyngeal strictures will be reviewed, and a novel successful technique using an existing tracheoesophageal puncture (TEP) site will be discussed. **Study Design:** A case report of a novel surgical technique will be presented in addition to a review of the medical literature focused on dilation of neopharyngeal strictures following total laryngectomy. A patient with history of oropharyngeal cancer successfully treated with radiation therapy and neck dissection presented with T4 laryngeal cancer for which he underwent successful total laryngectomy and partial pharyngectomy followed by chemoradiation, as well as primary tracheoesophageal voice restoration and now presented with significant neopharyngeal stricture. **Methods:** After unsuccessful attempted dilation of the neopharyngeal stricture in an antegrade fashion, retrograde dilation was achieved through the TEP site using a modified Seldinger approach and the Blom-Singer TEP puncture kit. **Results:** The use of the TEP site allowed the neopharyngeal stricture to be dilated to a 28 French width. Postoperatively the patient was able to resume oral diet. **Conclusions:** Dilation of a significant neopharyngeal stricture was accomplished in a retrograde fashion utilizing a preexisting TEP puncture site. This case demonstrates how creative troubleshooting and intimate knowledge of the relevant anatomy can allow for the successful treatment of challenging complications in patients following total laryngectomy.

---

**9:54      Q&A**

**MODERATOR**

**William I. Kuhel, MD, New York, NY**

**10:02      Papillary Thyroid Cancer: Controversies in the Management of Neck Metastasis**

*Harold C. Davidson, MD PhD, Pittsburgh, PA*  
*Brian J. Park, MD, Pittsburgh, PA*  
*Jonas T. Johnson, MD\*, Pittsburgh, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to: 1) recognize the incidence of cervical metastasis associated with papillary thyroid cancer; 2) identify the sites most commonly involved; and 3) discuss the best treatment options.

**Objectives:** We seek to confirm to increased incidence of patients encountered with papillary thyroid cancer and correlate this with the perception of increasing need for therapy of neck metastasis. **Study Design:** A retrospective analysis of all patients undergoing neck dissection (ND) for papillary thyroid cancer at this university medical center. **Methods:** The records of patients encountered between 1986-2007 were analyzed for extent of ND, nodes removed, and nodes involved. Clinical course was observed. The study was IRB approved and HIPAA compliant. **Results:** The number of patients referred with metastatic papillary thyroid cancer has steadily increased since 1986. Metastasis to the lateral compartments is commonly encountered. Patients with only 1 or 2 nodes involved are rare. **Conclusions:** Prior to ND the patient with papillary thyroid cancer should be studied with cervical ultrasound. Suspicious nodes should undergo fine needle aspiration. Comprehensive functional ND offers the best opportunity for disease control. Parathyroid implantation at the time of thyroidectomy should be considered in all patients with cervical metastasis.

---

## 10:10 Directed Parathyroidectomy: Lessons Learned

*Phillip K. Pellitteri, DO\*, Danville, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to describe the methodologic elements involved in scan directed, minimally invasive parathyroidectomy.

**Objectives:** This investigation will discuss the nuances of scan directed minimally invasive parathyroid exploration through the analysis of a large patient population surgically treated for hyperparathyroidism. **Study Design:** Descriptive study utilizing imaging analysis and medical chart review. **Methods:** Retrospective analysis of 634 patients with hyperparathyroidism (HPT) undergoing a scan directed, minimally invasive exploration protocol at an academic tertiary care facility. **Results:** Sestamibi imaging (planar/SPECT) accuracy in localizing hyperfunctional parathyroid tissue was 93%. CT-MIBI fusion imaging augmented accurate localization and guided exploration in adenomas ectopically located or distant from the thyroid. Mean IOPTH degradation was 74% and 70% in patients with primary and secondary/tertiary HPT respectively. IOPTH levels which were discordant in absolute values from those obtained preoperatively were due to assay quality control variations. Sustained normocalcemia was achieved in 98.8% of patients. Recalcitrant hypercalcemia occurred in 3 patients with double adenomas who experienced adequate degradation in IOPTH during initial surgery. IOPTH was consistently effective in signaling persistent parathyroid hyperfunction in patients with sporadic hyperplasia. **Conclusions:** Rigorous selection criteria and adherence to protocol are essential to successful minimally invasive exploration. Imaging techniques combining anatomic and physiologic characteristics offer benefit in selected instances. Reliable IOPTH assessment represents the most important aspect of all minimally invasive protocols, demanding quality control monitoring by laboratory and surgical personnel. This methodology represents an effective and cost efficient approach to the majority of patients with hyperparathyroidism.

---

## 10:18 Airway Management in Anaplastic Thyroid Cancer

*Ashok R. Shaha, MD\*, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to manage complex airway problems in patients with anaplastic thyroid cancer.

**Objectives:** Patients who present with advanced anaplastic thyroid cancer, airway management is difficult due to bilateral vocal cord paralysis or tracheal invasion by the tumor. Airway management can be extremely complex in these patients. **Study Design:** Retrospective study. **Methods:** This is the experience of the author over the past 20 years. Of 30 patients who presented with anaplastic thyroid cancer and acute airway problems. Their airway problems were developed soon after presentation or a few months after the treatment. Ten patients presented with initial symptoms of acute airway distress. All of the patients were treated with tracheostomy or cricothyrotomy. **Results:** The 10 patients who presented with initial symptoms of acute airway distress died within 4 months. Eight of the remaining 20 patients developed bilateral vocal cord paralysis. Airway management for these patients depended on the extent of distant disease and the family understanding of the advanced nature of the disease and palliative efforts. **Conclusions:** Airway management was the most critical issue in patients who presented with anaplastic thyroid cancer and initial airway distress. Cricothyrotomy was helpful in avoiding acute airway catastrophe. It is important to distinguish between poorly differentiated and anaplastic thyroid cancer for appropriate airway management.

---

## 10:26 Q&A

## 10:34 Break with Exhibitors - Liberty A View Posters - Foyer

## 11:00 - PANEL: LARYNGEAL STENOSIS

**Moderator:** Lucian Sulica, MD, New York, NY

**Panelists:** Patrick J. Gullane, MD\*, Toronto, ON  
Stanley M. Shapshay, MD\*, Albany, NY  
Peak Woo, MD\*, New York, NY  
Jacob Pieter Noordzij, MD\*, Boston, MA

## 12:00 Lunch - Horizons Rooftop Ballroom

## 12:00 - Triological Thesis Seminar - Salon 3-4 1:30

## 1:30 - PANEL: NEW FRONTIERS IN SINUS SURGERY

**2:25 Moderator: Ralph B. Metson, MD\*, Boston, MA**  
**Panelists:** Steven D. Schaefer, MD\*, New York, NY  
Mark Samaha, MD, Montreal, PQ  
Ashutosh Kacker, MD, New York, NY  
Noam A. Cohen, MD, Philadelphia, PA

**MODERATOR**

**Ashutosh Kacker, MD, New York, NY**

**2:30 Clinical Evaluation of a Novel Internal Nasal Dilation Stent for the Improvement of Nasal Breathing**

*Michael G. Brandt, BSc MD, London, ON Canada (Resident Travel Award)*

*Corey C. Moore, MSc MD, London, ON Canada*

*Philip C. Doyle, PhD, London, ON Canada*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to explain the influence of the internal nasal valve on nasal obstruction and compare the utility and tolerance of external and internal nasal dilation devices in improving nasal airflow.

**Objectives:** Nasal dilation devices have been used to treat the common symptom of nasal obstruction with little empirical evidence. This study sought to assess rhinometric improvement in nasal airflow, perceived comfort, and the utility of nasal dilation devices for individuals with nasal obstruction treated with an external nasal dilator (END) or a novel internal nasal dilation stent (INDS). A novel instrument for the assessment of nasal dilation device tolerance was also proposed. **Study Design:** Prospective, single blinded, randomized, crossover trial. **Methods:** Twenty-three individuals with symptoms of nasal obstruction were randomized to undergo rhinometry and a trial with both a novel INDS and a validated END. Each device was used for 7 days in a randomized, crossover fashion. Objective measures of nasal airflow as well as maximum and continuous duration of use were assessed. The novel Western Nasal Dilation Tolerance Scale (WNDS) was used to evaluate perceived comfort and challenge associated with these devices. **Results:** The END and INDS showed significantly greater nasal airflow from baseline with the INDS being significantly better than the END. The INDS was also used significantly more than the END. The WNDS correlated with maximum wear time and users demonstrated significantly greater comfort and less challenge using the INDS compared to the END. **Conclusions:** The novel INDS showed 3.4 times improved nasal airflow from baseline, was used maximally and continuously longer than a validated END, and was judged to be significantly more tolerable. The WNDS proved reliable and valid in assessing nasal dilation comfort, challenge, and overall tolerance.

---

**2:38 The Role of Three Dimensional Computed Tomography in Defining Frontal Recess and Frontal Sinus Anatomy**

*Seth J. Isaacs, MD, Syracuse, NY (Resident Travel Award)*

*Parul Goyal, MD, Syracuse, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to demonstrate an understanding of three dimensional computed tomography and its role in defining frontal recess anatomy.

**Objectives:** Despite advances in endoscopic surgical techniques management of frontal sinus disease remains challenging. Much of this is related to the complex nature of frontal recess anatomy. A thorough understanding of frontal recess anatomy is paramount for the safety and success of frontal sinus surgery. Three dimensional computed tomography (CT) may allow surgeons to obtain a more complete preoperative assessment of frontal recess anatomy. The purpose of this study is to determine if reconstructed three dimensional CT images as an adjunct to conventional triplanar imaging provide additional information regarding the frontal recess anatomy. **Study Design:** Prospective study. **Methods:** Two otolaryngologists reviewed the CT scans of 25 patients referred for routine paranasal sinus disease. The findings from review of the triplanar CT images were compared to the findings from review of the three dimensional reconstructions. Each study was assessed for 1) frontoethmoidal cells; 2) agger nasi cell; 3) suprabullar and frontobullar cells; 4) intersinus septal cell; 5) superior uncinat process attachment site; and 6) frontal sinus outflow tract. The examiners rated the usefulness of each study to identify each of the above anatomic subsites using a 10 point Lickert scale. **Results:** Intersinus septal cells, supraorbital cells, and the anterior-posterior dimension of the frontal sinus outflow tract were better defined on the reconstructed three dimensional CT images. **Conclusions:** Three dimensional computed tomography is a useful adjunct to the conventional triplanar studies for the evaluation of frontal sinus and recess anatomy. This technique can define certain anatomic variants more effectively than two dimensional multiplanar reconstructed images.

---

**2:46 THIRD PRIZE - RESIDENT RESEARCH AWARD**

## **Efficacy of Sinonasal Simulator in Teaching Endoscopic Nasal Skills to Residents**

*Kathryn L. Ossowski, MD, Pittsburgh, PA*

*Diane C. Rhee, BS, Pittsburgh, PA*

*Elaine N. Rubinstein, PhD, Pittsburgh, PA*

*Berrylin J. Ferguson, MD\*, Pittsburgh, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to demonstrate that training with nasal endoscopic simulation enhances efficiency and may improve comfort to the patient.

**Objectives:** To develop a nasal model (NM) which accurately simulates human texture and anatomy and to study the effect of training with NM on performance of video rigid nasal endoscopy and video flexible laryngoscopy. **Study Design:** A randomized blinded control trial. **Methods:** Twenty medical students without prior endoscopic experience, stratified by prior video game experience, were randomized to training or no training on NM. All participants viewed a 15 minute video instruction on endoscopy. Students randomized to training then practiced on the NM for 15 minutes. All students were tested within 90 minutes of the initial instruction with a timed identification of structures on NM followed by a timed flexible laryngoscopy on a human volunteer who ranked comfort/discomfort on a visual analogue scale. **Results:** The students in the training group had a significantly shorter procedure time on NM using rigid nasal endoscopy compared to untrained students (61 sec vs 104 sec,  $p = 0.025$ ). The trained students showed a trend, which did not reach statistical significance, towards faster flexible laryngoscopy on the model (23 sec vs 32 sec,  $p=0.085$ ). The trained students had average lower discomfort scores (0.89 vs 1.33) compared to untrained students, but this did not reach statistical significance. **Conclusions:** Our nasal model accurately simulates human texture and anatomy and provides an opportunity for endoscopic training without concern of bloodborne pathogens and expense of cadavers. Further development of the nasal model is warranted to expand the training utility.

---

### **2:54 Q&A**

#### **MODERATOR**

**Max M. April, MD, New York, NY**

### **3:02 Laser Disruption of Biofilm**

*Yosef P. Krespi, MD\*, New York, NY*

*Paul Stoodley, PhD, Pittsburgh, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the basics of growing biofilm on plate and on metal in vitro. General knowledge and information of laser assisted plasma formation and shock-wave generation. Learn about the ability of Q-switched Nd:YAG laser to disrupt biofilm in an in vitro setting. Discuss the future applications of such laser systems in otolaryngology specifically for the management of biofilm formation in the paranasal sinuses and the middle ear.

**Objectives:** To determine the ability of Q-switched Nd:YAG laser to disrupt biofilm in vitro. **Study Design:** Biofilms were grown in Luria-Bertani broth 72 hours prior to experiment from the clinical otorrhea isolate pseudomonas aeruginosa. Biofilms were placed in MatTek culture plates and on stainless steel screws. The medium was replaced daily and the cultures were placed in shaker table and incubated at 37C. **Methods:** Ten culture plates and six screws were used for the laser disruption of biofilm experiment. Q-switched Nd:YAG laser using pulse length of 10ns, 8mJ energy and frequency of 1-10Hz. Laser was delivered on biofilm using probes designed originally for cataract surgery. The laser fiber tip was targeted against Titanium creating the production of plasma, resulting in shockwave effect. Laser tip was kept at 10mm distance from the biofilm during laser emission. **Results:** Biofilms were imaged before, during and after laser application using confocal microscope with either a 10X air objective or a long working distance 63X water immersion. The biofilm was imaged either growing in the grooves of the threads on the screws or on the glass—plastic “step” of the MatTek plates. During laser treatment time lapse function was used to capture the experiment. During exposure to the laser generated shockwave, the biofilm was seen to oscillate with individual pulses. Large and small pieces of biofilm were removed instantly and effectively from their attached surface. **Conclusions:** We were able to effectively disrupt pseudomonas biofilm in vitro utilizing Q-switched Nd:YAG laser that generated plasma formation and resulting shockwave effect.

---

### **3:10 Analysis of Subsequent Episodes of ACE Inhibitor Induced Angioedema with Oral Cavity and/or Airway Involvement after Treatment for an Initial Episode**

*Daniel S. Roberts, MA, Boston, MA*

*Christoph T. Hutchinson, MA, Boston, MA*

*Avner Aliphaz, MD, Boston, MA*

*Elizabeth J. Mahoney, MD, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to identify risk factors for repeat episodes of ACE inhibitor induced angioedema (AIIA) and learn steps that can be taken to lessen the chance for second episodes of AIIA.

**Objectives:** To determine the incidence and probability of second occurrence of AIIA in population of culturally diverse patients managed at an urban medical center. A concerning trend of recurrent AIIA has been noted at our medical center. Parameters assessed include: 1) incidence of recurrent AIIA; and 2) specific risk factors for recurrence of AIIA. **Study Design:** Retrospective review. **Methods:** A retrospective chart review of all patient encounters at our medical center between 1/1/2002 and 12/30/2005 with a diagnosis of angioedema was performed. Etiology of angioedema, comorbidities, and documentation of ACEI as "allergy" in patient medical record were noted. Observations regarding risk factors for recurrent AIIA were made. **Results:** 242 angioedema encounters satisfied inclusion criteria. ACEI was the most common cause of angioedema occurring in 131 patients. Recurrent AIIA occurred in 4 patients. Thus the incidence of recurrent AIIA was 3.05%. Risk factors for recurrence included failure to document in the medical record suspicion that the ACEI medication induced the initial episode of angioedema, failure to consider risk in prescribing ACE after an episode of angioedema had occurred, and problems with physician-patient communication. **Conclusions:** Angioedema can cause life threatening airway compromise. Recurrent ACEI induced angioedema (AIIA) should be preventable but we found a recurrence rate for AIIA at 3.05%. Reasons for occurrence of apparently preventable AIIA include missteps in patient management and problems with doctor-patient communications. Otolaryngologists can educate colleagues and modify clinical practices to avert the potentially life threatening side effects of ACEIs in patients with a prior episode and/or known risk factor of AIIA.

---

**3:18      Usefulness of Lateral Neck Film as a Diagnostic Study for Patients with Sore Throat Suspected to Have Epiglottitis or Retropharyngeal Abscess**

*Sarah S. Seo, MD, Boston, MA (Resident Travel Award)*

*Avner Alphas, MD, Boston, MA*

*Michael Archambault, MD, Boston, MA*

*Kenneth M. Grundfast, MD FACS\*, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the utility of the lateral neck film as a diagnostic study for patients suspected to have epiglottitis or retropharyngeal abscess and demonstrate that it can lead to unnecessary further assessment and unwarranted interventions.

**Objectives:** To evaluate the usefulness of a lateral neck film (LNF) in differentiating isolated easily treatable pharyngitis from epiglottitis and retropharyngeal abscess that are more serious and potentially life threatening. **Study Design:** A retrospective chart review of LNFs obtained to assist in the evaluation of patients with severe pharyngitis for whom the diagnoses of epiglottitis and retropharyngeal abscess were considered possibly to be present. **Methods:** Retrospective review of 388 cases from 2001 to 2005. Parameters analyzed included: age, gender, presenting symptoms and findings on exam, radiographic findings, course, and outcome. **Results:** Diagnostic value of LNFs for epiglottitis showed a sensitivity of 57%, specificity of 93%, positive predictive value of 13%, and negative predictive value of 99%. There were 4 true positives, 28 false positives, 3 false negatives, and 353 true negatives for a total of 7 confirmed cases of epiglottitis. Of 28 false positives 16 were discharged from the emergency room 5 with otolaryngologic evaluation. 12 were admitted for observation of which 4 had evaluation by otolaryngology. Diagnostic value of LNFs for retropharyngeal abscess showed a sensitivity of 82%, specificity of 98%, positive predictive value of 60%, and negative predictive value of 99%. There were 9 true positives, 6 false positives, 2 false negatives, and 371 true negatives. **Conclusions:** Although LNF is useful in diagnosis of retropharyngeal abscess, the LNF is not highly reliable in diagnosis of epiglottitis; false positive or equivocal diagnosis of epiglottitis based on a LNF can lead to unnecessary further assessment and unwarranted interventions.

---

**3:26      Q&A**

**3:34      Break with Exhibitors - Liberty A  
View Posters - Foyer**

**MODERATOR**

**Edmund DeAzevedo Pribitkin, MD\*, Philadelphia, PA**

**4:00      Successful Use of Vacuum Assisted Closure Therapy in the Head and Neck**

*Karan Dhir, MD, New York, NY (Resident Travel Award)*

*Jonathan Lipana, MD, New York, NY*

Anthony Reino, MD\*, New York, NY  
William Lawson, MD DDS\*, New York, NY

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the applicability and versatility of vacuum assisted wound closure (VAC) in the head and neck region and apply the wound VAC in the treatment of complex wounds.

**Objectives:** The wound VAC (vacuum assisted closure) has been used in many areas of surgery to promote healing and facilitate secondary reconstruction. Until recently this treatment modality was overlooked in the otolaryngology literature and the authors propose that its use should be routine in the treatment of complex head and neck wounds. **Study Design:** A cohort study at a tertiary care center. **Methods:** All patients treated by the authors with complex head and neck wounds from 2006 and 2007 were subjected to wound VAC therapy. The wound VAC dressing was changed every 72 hours and the hospital duration, outcome and ancillary procedures were recorded. **Results:** Of the 18 patients treated for a total of 32 wounds 17 patients were adequately treated without the need for further intervention. All patients in the cohort were successfully started on outpatient therapy after an initial inpatient stay ranging from 5-28 days. **Conclusions:** This study shows the applicability and versatility of vacuum assisted wound closure in the head and neck. Based on our results the authors feel that this mode of therapy should be a routine part of the otolaryngologist's armamentarium for the treatment of complex wounds within the head and neck.

---

#### 4:08      **Standard Cosmetic Use of Botulinum Toxin and Its Variance from Published Recommendations**

Jeffrey H. Spiegel, MD, Boston, MA  
Priyanka A. Shah, BS, Boston, MA (Presenter)

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the methods in which Botox is prepared, stored, and used by practicing physicians from a number of specialties. The extent of variance from official guidelines in each of these areas will become evident.

**Objectives:** To demonstrate that a majority physicians use Botox Cosmetic in a way that significantly deviates from official guidelines with regard to application, preparation, and storage. **Study Design:** Survey of practicing physicians in New York, Chicago, and Los Angeles who are recommended as experts in the use of Botox Cosmetic® by the manufacturer. **Methods:** Surveys on Botox handling and use by practicing physicians in New York City, Los Angeles and Chicago, currently administering Botox Cosmetic were collected. Physicians reported preparation, storage, and usage methods including age range of patients, frequency of treatment, and setting of administration among others. **Results:** A majority of physicians prepare, handle, and use Botox Cosmetic® in a method that deviates from FDA recommendations and the product insert. This includes storing unused Botox beyond the recommended period, administering to unapproved muscle areas and age groups, and treating multiple patients per vial. **Conclusions:** Physicians' use of Botox Cosmetic varies significantly from official recommendations for use of this product. Potential causes and implications for expanded use labeling are discussed.

---

#### 4:18      **Q&A**

#### 4:25 -      **PANEL: LESS IS MORE: EVOLUTION IN PEDIATRIC** 5:20      **OTOLARYNGOLOGY**

**Moderator:** Robert F. Ward, MD\*, New York, NY  
**Panelists:** Udayan K. Shah, MD, Wilmington, DE  
Margaret A. Kenna, MD\*, Boston, MA  
Joseph Haddad Jr., MD\*, New York, NY  
Michael J. Cunningham, MD, Boston, MA

#### 5:30-      **Meet the Authors Poster Reception - Liberty Foyer** 7:00

---

# 27<sup>th</sup> Sunday January

#### 7:00 -      **Business Meeting (Members Only) - Salon 3-4**

7:50 Breakfast with Exhibitors - Liberty A

7:00 - Exhibit Hall Open - Liberty A  
11:00

7:00 - Speaker Ready Room - Salon 2  
12:00

7:00 - Registration - Liberty Foyer  
12:00

9:00 - Spouse Hospitality - Salon 6  
11:00

8:00 - Scientific Sessions - Liberty B  
12:00

8:00 Welcome Remarks and Announcements  
Lanny Garth Close, MD\*, New York, NY

8:05 Introduction of Resident Research Award Winners  
Carol M. Lewis, MD MPH, Boston, MA  
Sharon L. Cushing, MD, Toronto, ON Canada  
Kathryn L. Ossowski, MD, Pittsburgh, PA  
Introduction of Poster Award Winners

**MODERATOR**

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

8:15 The Effect of Body Mass Index on Chemoradiation Outcomes in Head and Neck Cancer

*Theodore E. McRackan, BS, Charleston, SC*  
*M. Boyd Gillespie, MD, Charleston, SC (Presenter)*  
*John M. Watkins, MD, Charleston, SC*  
*Amy E. Herrin, PhD, Charleston, SC*  
*Elizabeth M. Garrett-Mayer, PhD, Charleston, SC*  
*Anand K. Sharma, MD, Charleston, SC*  
*Terry A. Day, MD, Charleston, SC*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to 1) discuss the effect of BMI on chemoradiation outcomes in head and neck cancer;  
and 2) discuss the potential role of BMI in treatment selection for head and neck cancer.

**Objectives:** Concurrent chemoradiotherapy has become an accepted treatment option for advanced carcinoma of the oropharynx and larynx. Clinical and molecular markers which predict chemoradiation response are needed to allow rational treatment selection for the individual patient. The present study investigates the association of initial body mass index (BMI) with response to concurrent chemoradiation in advanced head and neck cancer. **Study Design:** Retrospective cohort study. **Methods:** The study includes 74 patients with AJCC stage III or IV squamous cell carcinoma of the oropharynx, larynx, or hypopharynx treated with concurrent chemoradiation at a single institution over a 5 year period. Regression analysis was performed to determine the association between initial BMI and PEG dependence, tumor recurrence, and survival after a minimum followup of 24 months while controlling for the independent variables of age, gender, race, site, stage, and need for surgical salvage. **Results:** Patients who were overweight (BMI > 25 kg/m<sup>2</sup>) at presentation were significantly less likely to be PEG dependent at followup (Hazard ratio 0.19; 95% C.I. 0.06-0.58) (p=0.003). In addition overweight patients had significantly improved disease free survival (HR 0.37; 95% C.I. 0.15-0.92) (p= 0.001) and a nonsignificant increase in overall survival (p=0.06) (HR 0.30; 95% C.I. 0.09-1.07) while controlling for other clinical variables. **Conclusions:** The present study suggests that overweight (BMI > 25 kg/m<sup>2</sup>) head

and neck cancer patients have improved swallowing and disease free survival with concurrent chemoradiation compared to normal and underweight patients. Further investigation is needed to determine whether primary surgery should be the preferred treatment in normal and underweight patients.

---

### 8:23 Rapid, Inexpensive, and Effective Treatment for Refractory Otitis Externa

*Michael J. Ruckenstein, MD MSc FACS FRCSC\*, Philadelphia, PA*  
*Caroline A. Banks, BA, Philadelphia, PA (Presenter)*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the efficacy of treating refractory chronic otitis externa with a topical mixture of antifungal, antibacterial, and anti-inflammatory ointments, and to compare this therapy to standard regimens.

**Objectives:** Patients with chronic otitis externa refractory to standard topical regimens represent a therapeutic challenge. The aim of this study was to determine the efficacy of treating such patients with a topical mixture of antifungal, antibacterial, and anti-inflammatory ointments. **Study Design:** Retrospective case series. **Methods:** We performed a retrospective chart review of 42 patients diagnosed with otitis externa and treated by filling the ear canal with various combinations of clotrimazole, polymyxin, bacitracin, mupirocin, and betamethasone. Patients were evaluated for improvement of symptoms and resolution of infection. **Results:** Twenty nine patients (69%) had chronic symptoms of otitis externa lasting one month or greater. Of these patients 26 (90%) had complete resolution of symptoms with the combination treatment. Prior to the combination regimen the average duration of symptoms with standard therapy was 7 months. The mean time for complete resolution of infection was 1 month for patients who responded to the combination solution. Patients required an average of 2 applications to cure the infection. Five patients (19%) experienced a recurrence of otitis externa. These patients remained symptom-free for an average of 3.5 months. **Conclusions:** Filling the ear with a mixture of antifungal, antibacterial, and anti-inflammatory ointments is an extremely effective and inexpensive treatment for chronic otitis externa that is resistant to standard therapy.

---

### 8:31 Comparison of Two Harvesting Methods on Fat Autograft Tissue Viability: In Vitro Studies

*Hyoungshin Park, PhD, Boston, MA*  
*James B. Kobler, PhD, Boston, MA*  
*Gerardo Lopez-Guerra, MD, Boston, MA*  
*James T. Heaton, PhD, Boston, MA*  
*Robert S. Langer, PhD, Cambridge, MA*  
*Steven M. Zeitels, MD\*, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand how fat tissue harvesting techniques affect tissue viability as assayed with in vitro methods.

**Objectives:** Fat harvesting for vocal fold injection medialization is typically done by scraping or lipoaspiration; however lipoaspiration is substantially more efficient. Considering this we compared viability of fat tissues obtained by these techniques. We also examined whether bFGF would increase cell proliferation in samples harvested by these methods. **Study Design:** Harvesting techniques (scraping and lipoaspiration) were compared using both human and ferret fat. In vitro assays were used to assess tissue viability and cell proliferation. **Methods:** Human (N=5) and ferret (N=15) abdominal fat tissues were harvested by scraping and lipoaspiration for a total of 40 specimens. Fat resected en block was used for controls. AlamarBlue and GPDH assays were used to quantitatively assess metabolic activity and cellular damage immediately after harvest. PicoGreen assays assessed cell proliferation by quantifying total DNA in harvested specimens after 0, 7, 14, or 21 days in culture. The effects of bFGF (10ng/ml) on proliferation were measured for the same time points. **Results:** The GPDH assay indicated that lipoaspiration produced more initial tissue damage ( $12 \pm 5$  mU/ml) than scraping ( $5 \pm 3$  mU/ml), but cell metabolic activity was similar in both groups based on the AlamarBlue assay. Cell proliferation at 14 and 21 days was significantly higher for lipoaspirated fat than for scraped fat ( $92.5 \pm 8.8$  vs  $55.1 \pm 1.3$  ngDNA at 14d and  $111.1 \pm 10.5$  vs  $44.6 \pm 4.1$  ngDNA at 21d). bFGF increased cell proliferation significantly for both harvesting methods. **Conclusions:** Lipoaspiration caused more initial damage than scraping but may yield better long term viability based on increased proliferation. bFGF may enhance proliferation capacity of grafted fat tissue.

---

### 8:39 Q&A

#### MODERATOR

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

### 8:47 Stereotactic Radiosurgery in the Management of Patients with Non-Serviceable Hearing and Small Vestibular Schwannomas

Daniel H. Coelho, MD, New York, NY  
John T. Roland, MD\*, New York, NY  
Eric G. Saintclair, MD, New York, NY  
John G. Golfinos, MD, New York, NY

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the role and limitations of stereotactic radiosurgery in the management of small vestibular schwannomas in patients with non-serviceable hearing. Comparisons between radiosurgery and translabyrinthine surgical excision will be discussed with attention to recurrence rates, facial nerve function, vestibular function, quality of life, and cost.

**Objectives:** We hypothesized that patients with small vestibular schwannomas and no serviceable hearing have improved rates of recurrence/progression, improved short and long term vestibular function, improved quality of life, and decreased cost of treatment when compared to similar patients undergoing stereotactic radiosurgery. **Study Design:** A retrospective chart review and vestibular function/quality of life questionnaire. **Methods:** From 2000-2007 57 patients with small (<1.5cm) vestibular schwannomas and non-serviceable hearing (WRS<50%) were treated at our institution. 25 underwent translabyrinthine resection and 22 underwent stereotactic radiosurgery. Outcomes measurements included recurrence/progression rates, vestibular dysfunction, quality of life, cost of treatment, and House-Brackmann facial grade at 1 year. **Results:** Patients undergoing surgical excision of their tumors demonstrated statistically significant lower rates of recurrence (as compared to progression on MRI for RS treatments group), lower rates of long term vestibular dysfunction, and better overall quality of life when compared to the RS patients. Overall costs of treatment and monitoring appear to be lower for the surgically treated patients. **Conclusions:** Patients with small vestibular schwannomas and no serviceable hearing should be offered translabyrinthine resection as the primary treatment. Better rates of control, significantly improved subjective vestibular function, long term quality of life, and decreased associated costs support this recommendation.

---

### 8:55 Who Is Performing Stapedectomy Surgery? Implications for Residency and Fellowship Training

Michael J. Ruckenstein, MD MSc\*, Philadelphia, PA

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand issues pertaining to the performance of stapedectomy surgery; recognize changes in practice patterns with regard to surgical treatment of otosclerosis.

**Objectives:** To demonstrate that 1) recent graduates of training programs in OTO-HNS are less likely to recommend/perform stapedectomy than more senior otolaryngologists; and 2) when surgery is recommended referral is most commonly made to an otologist/neurotologist. **Study Design:** Survey of 500 regional otolaryngologists pertaining to their treatment of patients with hearing loss secondary to otosclerosis. **Methods:** Otolaryngologists in community practice were provided with written surveys pertaining to their treatment of otosclerosis. **Results:** Data were obtained from 179 general otolaryngologists treating adults and children in solo or group private practices in our geographic region. The majority (66%) diagnosed 1-5 new cases/year. Ten percent of surgeons graduating in the 1970's, 25% graduating in the 1980's, 50% graduating in the 1990's, and 90% of graduates in 2000's never performed stapedectomy as part of their practices ( $p < 0.001$ ). Similarly a significant number of surgeons who formerly performed stapedectomies no longer do this surgery. A trend toward greater use of hearing aids for the treatment of otosclerosis was seen in more recent graduates ( $p > 0.08$ ). When surgery was recommended otologists/neurotologists received the majority of referrals from the practitioners surveyed. **Conclusions:** Stapedectomy is performed and recommended less often by more recent graduates of otolaryngology training programs. Given that the majority of referrals for stapedectomy are made to otologists/neurotologists current fellowship requirements should likely include stapedectomy as a component of training.

---

### 9:03 Linezolid for the Treatment of Otorrhea Caused by Methicillin Resistant Staphylococcus Aureus (MRSA) and Multiple Drug Resistant Streptococcus Pneumoniae (MDR-SP)

Glenn Isaacson, MD\*, Philadelphia, PA  
Stephen A. Aronoff, MD, Philadelphia, PA

**Educational Objective:** At the conclusion of this presentation, the participants should be able to better understand otorrhea caused by resistant gram-positive organisms and alternatives for treatment.

**Objectives:** To describe a consecutive series of children with refractory otorrhea treated with linezolid and document its clinical effectiveness and adverse effects. **Study Design:** Retrospective, single institution case series. **Methods:** The records of children treated with linezolid for refractory gram-positive otorrhea from 2003-2006 were analyzed for causative organisms, antimicrobial sensitivities, history of prior medical treatments, time to cessation of otorrhea, adverse effects of linezolid and

recurrence of infection. **Results:** Eleven episodes of refractory gram-positive otorrhea treated with linezolid were documented in 9 children during the study period. Eight were caused by MRSA and 3 by MDR-SP. Prior treatment regimes included clindamycin, trimethoprim-sulfamethoxazole/rifampin, amoxicillin-clavulanate, and/or a third generation cephalosporin. Nearly all patients had failed extended courses of fluoroquinolone ear drops. All children were free of otorrhea by the 14th day of twice daily treatment with oral linezolid at 100mg/kg/day. One child developed two additional episodes of MRSA otorrhea 3 and 10 months after initial treatment. Each was successfully controlled with linezolid. There were no adverse effects from linezolid treatment. **Conclusions:** Oral linezolid is highly effective in the treatment of refractory otorrhea caused by MRSA and MDR-SP. It has a low risk of serious side effects. It is one of only a few oral agents with activity against these organisms and is very expensive. Linezolid should be used only when otorrhea cannot be treated with conventional agents or when complications of otitis media pose a risk to life or function.

---

## 9:11 Q&A

### MODERATOR

Peak Woo, MD\*, New York, NY

## 9:19 Phonomicrosurgical Treatment of Intracordal Vocal Fold Cysts in Singers

*James A. Burns, MD, Boston, MA*

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

*Tara S. Stadelman-Cohen, MS, Boston, MA*

*Robert E. Hillman, PhD, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to describe surgical technique strategies to optimize vocal outcomes in singers with intracordal vocal fold cysts.

**Objectives:** Phonomicrosurgical excision of intracordal vocal fold cysts in singers can be challenging because the cyst often replaces substantial amounts of normal superficial lamina propria (SLP) and microlaryngoscopic dissection can result in diminished pliability of phonatory mucosa. Additionally published post-surgical vocal outcome data for this patient population is sparse. This study describes surgical technique strategies and reports vocal outcomes in singers undergoing phonomicrosurgical excision of intracordal vocal fold cysts. **Study Design:** A prospective study was done over six months in eight consecutive singers undergoing phonomicrosurgery. **Methods:** A subepithelial resection was done following an infusion. All patients received postoperative voice therapy with a speech language pathologist trained in classical singing. Acoustic and aerodynamic vocal function tests were performed before and after surgery and therapy. **Results:** Acoustic measures: Most patients showed postoperative reductions in perturbation (7/8 reduced jitter and 6/8 reduced shimmer) and noise-to-harmonic values (7/8 reduced NHR) with most attaining normal levels (5/8 normal perturbation and 8/8 normal NHR). Aerodynamic measures: Only 3/8 patients showed postoperative improvements in vocal efficiency (SPL/subglottal air pressure) but 5/8 still attained normal values while 4/8 showed decreases in average airflow with 8/8 attaining normal values. All patients reported substantial improvement and returned to high performance singing within 6 weeks of surgery. **Conclusions:** Vocal outcome data corroborated patients' satisfaction with the ability to return to successful performance. Results demonstrate that precise phonomicrosurgical techniques optimize vocal outcomes in singers with cysts and thereby expand the cohort of suitable candidates for primary surgical management.

---

## 9:27 Natural History of Idiopathic Vocal Fold Palsy: Evidence and Problems

*Lucian L. Sulica, MD, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be familiar with evidence regarding evolution, duration and rate of recovery of idiopathic vocal fold paralysis, as well as discrepancies in assessment and reporting that make this evidence problematic.

**Objectives:** To examine the evidence for commonly held beliefs about the evolution, duration and rate of recovery of idiopathic vocal fold paralysis. **Study Design:** Literature review. **Methods:** All series of vocal fold paralysis presented in the literature since 1908 were carefully reviewed for data regarding idiopathic vocal fold paralysis. Anecdotal accounts were discarded. Information from 622 cases in 15 series regarding incidence, duration and rate of recovery was compiled and compared. **Results:** The incidence of idiopathic vocal fold paralysis ranged from 10-41% and remained constant over time. Rates of recovery of voice and recovery of motion varied greatly (14 to 75% and 14 to 73% respectively). Due to important differences in definitions of recovery and methods of evaluation, these are not subject to meaningful statistical analysis. Most cases recovered within 12 months, but crucial differences in methods of evaluation compromise this data as well. **Conclusions:** Based on current reports it is possible to draw only the vaguest conclusions regarding the natural history of vocal fold paralysis. Three problems compromise existing data: 1) variable definition of recovery; 2) failure to account for or even report delays in diagnosis which are usual for this diagnosis; and 3) crude "all-or-none" notions of vocal fold paralysis inconsistent with physiologic and

clinical evidence. Future investigation should set forth assumptions and terms clearly so that useful data may be gathered.

---

**9:35 Pulse Dye Laser in the Treatment of Vocal Fold Scar; A Preliminary Report**

*Melissa M. Mortensen, MD, New York, NY*

*Peak Woo, MD\*, New York, NY*

*Chandra M. Ivey, MD, New York, NY*

*Linda Carroll, PhD, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the use of the pulse dye laser for the treatment of vocal fold scar.

**Objectives:** Vocal fold scarring after radiation, phonosurgery and laser cordectomy causes moderate to severe dysphonia. Surgical attempts at scar removal have limited success. Pulsed dye laser (PDL) treatment has been shown to be effective in softening scarred skin by serial office treatments. The objective of this preliminary study is to evaluate the use of the PDL in the management of patients with established vocal fold scarring in the office setting. **Study Design:** This is an IRB approved prospective study involving 11 patients. The causes of scarring were phonosurgery (n=7), radiation (n=2) and partial laryngectomy (n=2). The subjects were evaluated pre-procedure and post-procedure using the voice handicap index, laryngeal stroboscopy, acoustic analysis and by self-evaluation. **Methods:** PDL was applied with the fiberoptic delivery system by three treatments at one month intervals in the office setting. The mean delivery was 69.9 pulses at 75 joules/pulse. **Results:** Nine out of eleven patients subjectively improved. Pre-procedure to post-procedure VHI improved from a mean of 51.09 (SD 24.05) to 41.63 (SD 31.28). The mean jitter improved from 2.147 (SD 1.51) to 1.514 (SD 1.47) and the mean shimmer from 3.59 (SD 2.59) to 3.11 (SD 2.40). Mean flow rate increased from 0.209cc/sec (SD 0.025) to 0.236cc/sec (SD 0.10). Analysis was performed with a paired t-test demonstrating  $p>0.05$ . Stroboscopy showed no worsening in any of the patients. **Conclusions:** PDL is a safe and potentially promising treatment for vocal fold scar, subjectively no patients worsened and 9 of 11 patients reported improved voice. Further study using this approach appears to be warranted.

---

**9:43 Q&A**

**9:50 Break with Exhibitors - Liberty A  
View Posters - Liberty Foyer**

**MODERATOR**

**Joseph Haddad Jr., MD\*, New York, NY**

**10:20 Failed Tympanostomy Tube Extrusion Is not a Random Event in Children or Their Siblings**

*Roya Azadarmaki, BS, Philadelphia, PA*

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

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the patterns of tube extrusion in individuals and siblings.

**Objectives:** Most tympanostomy tubes placed in children's tympanic membranes extrude spontaneous. Between 1-3% of tubes fail to extrude by 30 months after placement. While tube retention should be a random occurrence, clinical experience suggests that some individual and their siblings are at increased risk. We sought to define this risk. **Study Design:** Single surgeon, retrospective case series with historical controls. **Methods:** A computerized database consisting of approximately 10,000 pediatric otolaryngology patients was searched to identify siblings with retained tubes and individuals with bilateral tube retention. These rates were compared to historical controls and subjected to statistical analysis. **Results:** Ninety pairs of siblings were identified. In 6 of the 90 both children required removal of retained tubes (6.7%). A rate of at 0.01% (1 in 10,000) would be expected if failed tube extrusion were a random with 1% incidence per ear ( $p<0.0000000001$ ). Of 3300 children undergoing bilateral tube insertion, 113 (3.4%) required bilateral surgical removal (expected rate of 0.01%;  $p<0.0000000001$ ). **Conclusions:** With a high level of certainty failed spontaneous tube extrusion is not a random event in individuals or sibling pairs.

---

**10:28 SECOND PRIZE - RESIDENT RESEARCH AWARD  
Evidence of Vestibular and Balance Dysfunction in Children with Profound Sensorineural Hearing Loss Using Cochlear Implants**

*Sharon L. Cushing, MD, Toronto, ON Canada*

*Blake C. Papsin, MD FRCSC\*, Toronto, ON Canada*

John A. Rutka, MD FRCSC, Toronto, ON Canada  
Adrian L. James, MA BM BCh FRCS, Toronto, ON Canada  
Karen A. Gordon, PhD, Toronto, ON Canada

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the incidence and nature of vestibular and dynamic balance dysfunction that occurs in the setting of profound sensorineural hearing loss requiring cochlear implantation.

**Objectives:** Abnormalities of vestibular and balance function in children with profound sensorineural hearing loss (SNHL) may parallel impairments in cochlear function. The objectives of the study were twofold: 1) assess vestibular and balance function in children with profound SNHL using unilateral cochlear implants; and 2) establish an age appropriate test battery for use in this population. **Study Design:** Prospective, cross-sectional design. **Methods:** 33 children (3.5–16 years) with profound SNHL using unilateral implants underwent a battery of vestibular function tests including caloric, rotational chair and vestibular evoked myogenic potential (VEMP) testing. Dynamic balance was assessed using the balance subset of the Bruininks-Oseretsky Test of Motor Proficiency (BOT2). **Results:** Compliance with all tests was high (>88%). Caloric abnormalities were seen in 48% (15/31) with a large proportion of those (6/15, 40%) reflecting mild abnormalities. VEMP was absent bilaterally in 5/25 (20%) and unilaterally in 8/25 (32%). Abnormalities in rotational chair testing occurred in 7/27 (26%). Age standardized performance on the BOT-2 was significantly poorer in our study population ( $\frac{1}{4}=12.8 \pm 4.5(\text{SD})$ ) compared to normal hearing controls ( $\frac{1}{4}=18.1 \pm 5.1(\text{SD})$ ;  $p=0.0006$ ). Of the vestibular tests only abnormalities on rotational chair testing correlated with performance on the BOT2 ( $p=0.0016$ ;  $R^2=0.4$ ), whereas abnormalities in caloric testing and/or VEMP were not predictive ( $p=0.34$ ,  $R^2=0.04$ ;  $p=0.99$ ;  $R^2=2 \times 10^{-6}$  respectively). **Conclusions:** Although compliance with all tests was high, only abnormalities on rotational chair testing, which assesses higher frequency motion (0.1-5Hz) and thus more “real world” vestibular function, correlated with dynamic balance. For this reason rotational chair testing may represent the test of choice in this population, particularly given that it can be easily performed in children of all ages.

---

**10:36 Pediatric Thyroid Teratoma: Case Report and Literature Review**

Roni M. Keller, MD, Brooklyn, NY  
Sophia Kogan, BA, Brooklyn, NY  
Christopher S. Song, MD, Brooklyn, NY

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the presentation and management of a thyroid teratoma in a pediatric patient.

**Objectives:** To present the case of an anterior midline neck mass in a pediatric patient. We intend to discuss the presentation and management of a thyroid teratoma. **Study Design:** Case report and literature review. **Methods:** Cases reported in the literature describe congenital thyroid teratomas, presenting with airway obstruction, feeding difficulty and polyhydramnios. We will describe a case of a 4 year old patient with a thyroid teratoma presenting as an anterior midline neck mass. A review of the published literature was performed. A detailed PubMed search was conducted to find all English language articles on thyroid teratoma in the pediatric population. **Results:** The patient presented with a noncompressive midline anterior neck mass. CT scan of the neck showed findings consistent with a thyroid teratoma. Intraoperatively we found that the mass involved both inferior thyroid lobes as well as the isthmus, sparing the superior poles of the thyroid which were preserved. Both recurrent laryngeal nerves were identified as were 4 parathyroid glands. Pathologic examination revealed a partially calcified lesion consistent with a mature teratoma. **Conclusions:** Thyroid teratomas are an unusual finding in children however should be considered in the differential diagnosis for midline neck masses in the pediatric patient.

---

**10:44 Q&A**

**10:50 - PANEL: OTOLOGY OFFICE PRACTICE: CHALLENGES AND  
11:50 TREATMENT OPTIONS**

**Moderator:** Samuel H. Selesnick, MD\*, New York, NY

**Panelists:** Douglas C. Bigelow, MD, Philadelphia, PA  
Sujana S. Chandrasekhar, MD\*, New York, NY  
Michael J. McKenna, MD, Boston, MA  
Simon C. Parisier, MD\*, New York, NY

**11:55 Introduction of Vice President-Elect, Mark S. Persky, MD\*, New York, NY  
Lanny Garth Close, MD\*, New York, NY**

**12:00    Adjourn**

# 2008 EASTERN SECTION POSTER PROGRAM

## E1. Primary Tracheal Carcinoma Expleomorphic Adenoma

*Nithin D. Adappa, MD, New York City, NY*  
*Jean A. Eloy, MD, New York, NY*  
*Benjamin L. Hoch, MD, New York, NY*  
*Eric M. Genden, MD, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to recognize primary tracheal tumors including presentation, pathologic findings, therapeutic treatment options and prognosis.

**Objectives:** Present the first reported case of primary tracheal pleomorphic adenoma with foci of in situ carcinoma expleomorphic adenoma. **Study Design:** This is a case report presentation. **Methods:** We describe a 51 year old man who presented to his primary care physician with progressive dyspnea and was misdiagnosed with new onset asthma. The patient was subsequently evaluated by the otolaryngology service to evaluate upper airway pathology and eventually diagnosed with a primary tracheal tumor. **Results:** We present this unusual case presentation. Additionally we review the presentation, significant pathologic findings, therapeutic treatment options, and overall prognosis. **Conclusions:** Carcinoma expleomorphic adenoma is an uncommon and potentially aggressive tumor usually found in the salivary glands. We present the first reported case of a primary tracheal pleomorphic adenoma with foci of in situ carcinoma expleomorphic adenoma.

---

## E2. Case Report: Postoperative Ingested Esophageal Throat Pack

*Jeffrey Cheng, MD, New York, NY*  
*Lily P. Love, MD, New York, NY*  
*Edward J. Shin, MD, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to recognize the problem of postoperative ingested throat packing and understand its management, along with possible complications.

**Objectives:** Review the reports and raise awareness of postoperative ingested throat packing and present a management strategy. **Study Design:** Case report and retrospective review of the reports on ingested throat packing. **Methods:** Published articles on ingested throat packing were found using a key word search through PubMed. **Results:** Only one prior report of ingested throat packing was identified in our search, which reported endoscopic findings of erosive and inflammatory changes within the stomach associated with postoperative ingested throat packing. **Conclusions:** We recommend that in cases of ingested throat packing if the surgical material is imaged within the esophagus, then an attempt to surgically retrieve it be undertaken because of the risk of inflammatory and erosive changes within the stomach. Radiography is very useful to rule out ingestion or aspiration of foreign bodies because of radiopaque operating room materials and can identify greater than 80% of esophageal foreign bodies. If, however, the throat pack is not able to be retrieved, it should pass through the rest of the gastrointestinal system in approximately 36 hours. Serial, plain radiographs should be obtained to follow the progression.

---

## E3. Advanced Oral Tongue Cancer in a 22 Year Old Pregnant Female

*Esther J. Cheung, MD, Hershey, PA*  
*Henry Wagner Jr., MD, Hershey, PA*  
*John J. Botti, MD, Hershey, PA*  
*William A. Flood, MD, Hershey, PA*  
*Fred G. Fedok, MD, Hershey, PA*  
*David Goldenberg, MD, Hershey, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to appreciate the complex man-

agement issues related to head and neck cancer presenting during pregnancy.

**Objectives:** Oral squamous cell carcinoma (OSCC) generally occurs in older men with smoking and alcohol use as the primary risk factors. However the incidence of OSCC in women and in younger patients has increased. We report and discuss the case of a 22 year old woman, 6 months pregnant who presented with stage IV (T4N2CM0) carcinoma of the oral tongue. **Study Design:** Case presentation and literature review. **Methods:** Presentation, imaging, histopathologic findings and clinical course with a discussion of implications. **Results:** The patient initially presented with a large ulcerative lesion involving the oral tongue, crossing the midline with bilateral cervical adenopathy. Biopsy of the tongue revealed well differentiated squamous cell carcinoma. A team consisting of head and neck surgery, radiation oncology, medical oncology and maternal-fetal medicine was assembled to manage her care. The patient initially refused surgical treatment and her stated primary goal was safe delivery of her fetus. Due to her gravid state a chemotherapy regimen was initiated to control tumor growth until 32 weeks gestation was reached. Parenteral corticosteroids were administered to enhance fetal lung maturity. After safe delivery of a healthy baby boy via caesarean section, concurrent radiation and chemotherapy was initiated. Radiation therapy induced complete regression of the primary tongue neoplasm with partial response of the neck nodes. The patient underwent a right radical and left modified radical dissection. **Conclusions:** Management of advanced oral carcinoma in pregnancy presents a unique set of challenges. Although physiologic changes of pregnancy are all potentially capable of promoting neoplastic growth, OSCC is exceedingly rare in this setting. Care must be taken to balance the appropriate and adequate treatment of disease and to ensure the safety of the patient and the fetus.

---

## **E4. Serial Suture Ligation Glossectomy for Squamous Cell Carcinoma in the Setting of a Massive Hemangioma**

*Wade W. Chien, MD, Boston, MA*

*Daniel G. Deschler, MD, Boston, MA*

**Educational Objective:** To describe a novel surgical technique for resection of squamous cell carcinoma in the setting of a massive tongue hemangioma.

**Objectives:** To describe a novel surgical technique for resection of squamous cell carcinoma in the setting of a massive tongue hemangioma. **Study Design:** Case report. **Methods:** The patient's medical record was reviewed. The clinical presentation, evaluation, management, and outcome were reported. **Results:** A 75 year old man with a history of longstanding massive hemangioma of the tongue presented with a 4cm squamous cell carcinoma of the involved oral tongue. Given the aberrant vascular anatomy of this lesion serial suture ligation was performed over a 2 week period, allowing complete removal of the squamous cell carcinoma and a large portion of the tongue hemangioma with minimal morbidity. Return to preop functional status was likewise achieved. **Conclusions:** Serial suture ligation glossectomy is a simple and effective technique for removing squamous cell carcinoma of the tongue in the setting of a massive hemangioma.

---

## **E5. Frontal Outflow Tract Obstruction following Open Repair of a Frontal Sinus Fracture: Balloon Catheter Dilation Technique**

*Thomas E. Christenson, MD, Philadelphia, PA*

*Prashant S. Malhotra, MD, Philadelphia, PA*

*Marc R. Rosen, MD, Philadelphia, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to demonstrate the application of this minimally invasive technique to relieve frontal sinus outflow tract obstruction following repair of anterior table frontal sinus fractures. Additionally participants should be able to discuss the potential benefits of this procedure when compared to the previously described open and endoscopic techniques.

**Objectives:** Frontal sinus outflow tract obstruction following surgical repair of frontal sinus fractures has been well documented in the literature. Though some of these patients are successfully treated medically others require surgical intervention. Open and endoscopic repair techniques have been described for these cases. In this paper we describe the use of balloon catheter dilation of the frontal sinus outflow tract to treat medically recalcitrant frontal sinus disease following open reduction and internal fixation of an anterior table frontal sinus fracture. **Study Design:** The authors describe a case of successful treatment of frontal outflow tract obstruction with balloon catheter dilation. **Methods:** Complete medical records and radiographic images as well as intraoperative video and fluoroscopic images were reviewed. **Results:** CT images obtained at three months postoperatively reveal no evidence of frontal sinus opacification and demonstrate widely patent frontal outflow tracts bilaterally. No complications occurred. **Conclusions:** Frontal outflow tract obstruction following surgical repair of frontal sinus fractures can lead to serious complications. In cases where surgical management is indicated balloon catheter dilation provides a minimally invasive and mucosa sparing option for surgical management.

---

## E6. Supraglottic Avulsion without Cartilaginous Fractures Following Blunt Anterior Neck Trauma in an Adolescent

David M. Cognetti, MD, Philadelphia, PA  
Michael J. Rutter, MD, Cincinnati, OH  
Joseph R. Spiegel, MD, Philadelphia, PA  
Romaine F. Johnson, MD, Cincinnati, OH  
Joseph M. Curry, MD, Philadelphia, PA  
Ellen S. Deutsch, MD, Wilmington, DE

**Educational Objective:** At the conclusion of this presentation, the participants should be able to: 1) discuss the mechanism and management of blunt laryngeal trauma; 2) compare the advantages and disadvantages of open versus endoscopic management of blunt laryngeal trauma; and 3) recognize the differences in the pediatric versus adult airway in relationship to blunt laryngeal trauma.

**Objectives:** 1) To report a unique case in which blunt anterior neck trauma resulted in avulsion of the supraglottic mucosa with exposure of the arytenoid cartilages and vocal ligaments in the absence of cartilaginous fracture; 2) to introduce a “plosive” mechanism for laryngeal soft tissue injury; 3) to highlight that presenting symptoms and external physical findings in blunt neck trauma do not always correlate with the extent of internal damage; and 4) to describe the endoscopic management of this patient. **Study Design:** Case report with photo and video documentation. **Methods:** Retrospective case study with literature review. **Results:** A 14 year old boy struck his anterior neck during a fall while running up stairs. He presented with faint neck ecchymosis, odynophagia, and aphonia but with no respiratory difficulty or complaints. Fiberoptic laryngoscopy revealed avulsion of the supraglottic mucosa without significant edema. The vocal ligaments and arytenoid cartilages were exposed and mobile bilaterally. Computed tomography revealed free air in the neck and nonossified laryngeal cartilages with no evidence of fracture. The patient underwent tracheostomy and laryngeal stenting. With solely endoscopic management of the mucosal avulsion the patient was eventually decannulated and recovered a functional voice. **Conclusions:** Blunt laryngeal trauma can result in extensive internal mucosal damage even with minimal external signs and without cartilaginous fracture, especially in the pediatric population. Rapid displacement of intrathoracic air may potentiate soft tissue injuries. Early laryngeal evaluation and airway management is critical in the care of these patients.

---

## E7. Delayed Maxillo-Orbital Cyst after Orbital Floor Fracture Repair

Michael S. Cohen, MD, Philadelphia, PA  
Karl V. Whitley, MD, Philadelphia, PA

**Educational Objective:** At the conclusion of this presentation, the participants should be able to describe a rare late complication of orbital floor fracture.

**Objectives:** To describe the presentation, diagnosis, and management of a rare complication of orbital floor fracture. **Study Design:** Case report. **Methods:** Case report and review of literature. **Results:** A 63 year old man presented to the emergency room with 7 days of worsening visual loss and left eye swelling. He reported a recent URI about two weeks prior to presentation. Past medical history was significant for an ipsilateral orbital floor fracture, which was repaired with a titanium plate 9 years prior to presentation. Physical exam revealed severe proptosis and periorbital edema. A CT scan revealed a large cystic collection within the orbit and maxillary sinus. The left globe was superiorly and laterally displaced, and tenting of the posterior globe at the insertion of the optic nerve was observed. The globe was markedly indented by the cyst. A radiopaque reconstruction plate spanned the largely dehiscent orbital floor. Ophthalmologic exam revealed an afferent papillary defect and visual acuity of 20/80, elevated from baseline 20/20. Emergent ENT consultation was recommended. Needle decompression of the collection was carried out in the ER, yielding 14mL of brown mucoid fluid and resulting in a significant reduction in proptosis. The collection was aspirated again the following morning and the patient was taken to the operating room for orbital floor exploration, maxillary antrostomy, and marsupialization of the cyst. Pathologic examination demonstrated squamous epithelium with hemosiderin deposition in addition to fresh clotted blood, making acute and chronic hemorrhage within a maxillo-orbital cyst the most likely diagnosis. Ophthalmologic exam postoperatively was improved with resolution of afferent papillary defect and 20/20 vision. **Conclusions:** A history of orbital fracture should raise suspicion of an intraorbital process in patients presenting with visual changes.

---

## E8. Recurrent Ludwig’s Angina in the Setting of Submandibular Sialolithiasis

Michael S. Cohen, MD, Philadelphia, PA  
James N. Palmer, MD, Philadelphia, PA

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the presentation,

diagnosis, and management of Ludwig's angina, and to describe some of its common and unusual causes.

**Objectives:** To describe a case of recurrent Ludwig's angina secondary to submandibular sialolithiasis. **Study Design:** Case report. **Methods:** Case report and review of literature. **Results:** We describe a 50 year old African-American man who presented to the ER with several days of left jaw and neck pain and 24 hours of acute swelling of the tongue and neck. On exam the patient was drooling and had a muffled voice. There was a 5 cm, tender, indurated, nonfluctuant mass in the left submandibular region and marked bilateral edema of the tongue and floor of mouth. There were no loose, tender, or purulent teeth. The patient was afebrile with a white blood cell count of 14.5. The patient was diagnosed with Ludwig's angina and underwent fiberoptic nasotracheal intubation and treatment with IV antibiotics and steroids. A CT scan of the neck revealed a hyperdense lesion within the left submandibular duct. After resolution of his symptoms and successful extubation, the patient was discharged with a plan for outpatient management of the left submandibular stone. The patient was subsequently lost to followup. Two years later the patient returned with pain and swelling of the same region. A CT scan demonstrated a string of hyperdensities lining Wharton's duct. The patient was nasotracheally intubated and treated with intravenous antibiotics in addition to surgical drainage and left submandibular gland resection. Pathology revealed acute and chronic sialadenitis. The patient's recovery was uncomplicated. **Conclusions:** Ludwig's angina is a rare but serious complication of submandibular sialolithiasis. Prompt treatment of the underlying pathology can prevent symptom recurrence.

---

## E9. Intraparotid Gland Aneurysm—A Case Report

*Daniel T. Ganc, MD, Newark, NJ*

*Soly Baredes, MD\*, Hoboken, NJ*

*Charles J. Prestigiacomo, MD, Hoboken, NJ*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to include an aneurysm in the differential diagnosis of a parotid mass, and consider a combined modality of embolization and surgery for the treatment.

**Objectives:** To present a case report of a patient with an intraparotid aneurysm, and discuss the evaluation and management and review of the literature of this rare entity. **Study Design:** Case report. **Methods:** A 42 year old woman was referred with a pulsatile mass of the right parotid gland. Angiography revealed a 2 cm aneurysm originating at the distal external carotid artery, incorporating the origin of the maxillary artery. **Results:** It was decided to resect the aneurysm following preoperative embolization. Angiography and deposition of 33% N-butyl cyanoacrylate at the neck of the aneurysm (and proximally to cover the neck) was performed. The following day the patient underwent a resection of the aneurysm, which entered the deep lobe of the parotid gland and was found at its lateral-most aspect to be adherent to and splaying the facial nerve. The elimination of pulsations by the embolization facilitated dissection of the facial nerve and minimized the chance of bleeding during the dissection. The patient had minimal facial asymmetry on postoperative day 1 and normal facial function on day 4. **Conclusions:** Intraparotid aneurysms are a rare cause of parotid masses, usually arising in the superficial temporal artery. Management of these lesions has been described as either by embolization or resection. Combining these modalities in our case facilitated dissection of the facial nerve for resection of what the patient perceived to be an unsightly mass.

---

## E10. Central Auditory Processing Deficiency Associated with Anatomic Deficit in Left Superior Temporal Lobe

*Christopher R. Grindle, MD, Philadelphia, PA (Resident Travel Award)*

*Robert C. O'Reilly, MD, Wilmington, DE*

*Theirry Morlet, PhD, Wilmington, DE*

**Educational Objective:** At the conclusion of this presentation, the participants should have a general understanding of central auditory processing and know how an anatomic abnormality along the processing pathway may lead to a central auditory processing deficiency.

**Objectives:** Many of the speech and language centers of the human brain are located in the left temporal lobe. We will examine the speech development in a patient who is anatomically deficient in some of these areas. **Study Design:** Case report. **Methods:** We report on the case of a now 11 year old boy who was noted to have delays in speech and language development. Upon workup it was noted that he has central auditory processing deficiencies and a large anatomic defect in the left superior temporal lobe. **Results:** An otherwise healthy 8 year old boy was referred for evaluation with his speech development. Per history he had normal speech and language development until 18 months of age using short sentences without any apparent auditory deficit. At that time he suddenly stopped speaking, regressing to unintelligible babbling. At three years of age he resumed speech and language development at a normal rate. Central auditory processing testing was conducted when he became of school age and was abnormal. MRI revealed a cystic 2.7x2.9x4.5 cm lesion in the left sylvian fissure and middle cranial fossa with no associated soft tissue component and no mass effect on the brain—most consistent with an arachnoid cyst. The patient has continued to progress with his auditory development despite his previous 18 month speech arrest. This is postulated to be due to the plasticity and the possible rerouting of the auditory processing pathways. **Conclusions:** Central

auditory processing deficiencies are poorly understood causes of speech and language disorders. A high index of suspicion is necessary when evaluating patients with speech and language disorders. Imaging is essential to evaluate for anatomic abnormalities and outcome is variable, but recovery of function may be possible even in with anatomic causes.

---

## **E11. Injection Augmentation of the Arytenoid for Aspiration after Supracricoid Partial Laryngectomy**

*Joel Guss, MD, Philadelphia, PA*  
*Micah A. Berman, BA, Philadelphia, PA*  
*Cesar E. Ruiz, CCC-SLP, Philadelphia, PA*  
*Gregory S. Weinstein, MD\*, Philadelphia, PA*  
*Natasha Mirza, MD\*, Philadelphia, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the role that collagen injection augmentation of the arytenoid may play in treating intractable aspiration after supracricoid partial laryngectomy.

**Objectives:** Supracricoid partial laryngectomy (SPL) provides excellent oncologic control of select laryngeal malignancies and allows lung powered phonation without the need for a permanent tracheostomy. While most patients are able to achieve normal oral intake with appropriate swallowing therapy, dysphagia with persistent aspiration remains a problem. **Study Design:** Retrospective case report and description of a surgical technique. **Methods:** We reviewed the medical record of an 84 year old man who had undergone SPL with cricothyroidoepiglottopexy and presented with recurrent aspiration pneumonia requiring replacement of a gastrostomy tube. Laryngoscopy demonstrated a gap between the left arytenoid and epiglottis with aspiration of pooled secretions. The patient underwent operative direct laryngoscopy with injection of bovine collagen to augment the left arytenoid. **Results:** Postoperatively the patient demonstrated improved swallowing without evidence of aspiration and was able to wean his gastrostomy tube feeds significantly. There were no signs of airway obstruction. **Conclusions:** Augmentation of the arytenoid by collagen injection can improve the sphincteric function of the reconstructed larynx and should be considered in patients with debilitating aspiration after SPL.

---

## **E12. Laryngeal Hypersensitivity with Recurrent Respiratory Distress: A Case Series**

*Joel Guss, MD, Philadelphia, PA (Resident Travel Award)*  
*Natasha Mirza, MD\*, Philadelphia, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to be aware of laryngeal hypersensitivity with recurrent laryngospasm and respiratory distress as a poorly characterized clinical entity and understand a series of treatment options that may be helpful in managing patients with this difficult condition.

**Objectives:** Laryngeal hypersensitivity with recurrent paroxysms of laryngospasm is unusual in patients without a history of recurrent laryngeal nerve injury and is a challenging entity to manage. **Study Design:** Retrospective case series. **Methods:** The medical records of five patients who were treated at a tertiary care hospital laryngology practice were reviewed. **Results:** Botulinum toxin (Botox) injection was effective in only two patients who had relatively mild symptoms. One patient responded to treatment with gabapentin. Treatment of coexisting laryngopharyngeal reflux and rhinosinusitis appeared helpful as well. Two patients underwent mini-tracheostomies for episodes of recurrent respiratory distress with laryngospasm. **Conclusions:** Laryngeal hypersensitivity with recurrent laryngospasm may respond to Botox injection and neuroleptics, but definitive treatment with a mini-tracheostomy is necessary in severe cases.

---

## **E13. Intracranial Meningioma Metastatic to the Posterior Neck**

*Tucker M. Harris, MD, Syracuse, NY*  
*Aneela Darbar, MD, Syracuse, NY*  
*James W. Holsapple, MD, Syracuse, NY*  
*Constance K. Stein, PhD, Syracuse, NY*  
*Christine E. Fuller, MD, Syracuse, NY*  
*Sydney C. Butts, MD, Syracuse, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to identify metastatic meningioma as a rare cause of a posterior neck soft tissue mass.

**Objectives:** To describe a case of a 10 year old boy with intracranial meningioma who developed metastatic lesions in the posterior neck after the initial resection. **Study Design:** Case report. **Methods:** The patient's chart was reviewed and pertinent lit-

erature was reviewed. **Results:** Several months after resection of a parasagittal parietal meningioma three firm, posterior neck masses developed. Magnetic resonance imaging of the head and neck demonstrated three well circumscribed, posterior neck subcutaneous masses, ranging from 2-cm to 3.5-cm in diameter and located along the paraspinal musculature. Excision of the posterior neck masses was without complication. Pathology revealed meningioma with histology similar to the original intracranial lesion, WHO grade I. There is associated invasion of lymph nodes, fibroadipose tissue, and skeletal muscle. Cytogenetic testing revealed terminal deletion of the long arm of chromosome Y and loss of one copy of chromosome 22. The literature describes few cases of intracranial meningioma metastasizing to the cervical lymph nodes. **Conclusions:** Metastasis of an intracranial meningioma is a rare occurrence, but it should be suspected as a cause of a neck mass in previously treated patients. Cytogenetic testing may help to define the aggressiveness of such tumors. Additional work on genetic tumor markers will be useful in further classifying metastatic meningiomas. Management of disease in this case consisted of tumor excision with close clinical and radiological followup.

---

## **E14. Facial Nerve Function in Hearing Preservation Acoustic Tumor Surgery: Does the Approach Matter?**

*Todd A. Hillman, MD, Pittsburgh, PA*

*Douglas A. Chen, MD\*, Pittsburgh, PA*

*Moises A. Arriaga, MD\*, Pittsburgh, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to compare the differences in facial nerve exposure and clinical outcomes between the retrosigmoid and middle fossa approach for cerebellopontine angle tumors.

**Objectives:** Compare short and long term facial nerve results as a function of the surgical approach used. **Study Design:** Retrospective review. **Methods:** The authors reviewed medical records to determine the short term and long term facial nerve results of patients undergoing acoustic tumor surgery with a hearing preservation approach over the past 15 years. The retrosigmoid and middle fossa approaches were specifically compared. **Results:** Fifty-seven patients undergoing a hearing preservation approach for an acoustic tumor had data regarding long term facial nerve function. 81% of patients undergoing a middle fossa approach had a House-Brackmann grade I-II at one year of follow-up while 80% of patients undergoing the retrosigmoid approach had a grade I-II suggesting equivalent results. With more critical analysis however, there were more patients with good acute facial nerve function in the retrosigmoid group. There were also more House-Brackmann grade I results at one year in the retrosigmoid group. **Conclusions:** The differences in facial nerve exposure between the two hearing preservation approaches translate into different clinical results. When selecting the hearing preservation approach for acoustic tumor excision, facial nerve function outcome is one variable to consider.

---

## **E15. Management of Congenital Ranula and Other Less Common Oral Cavity Lesions**

*Sarah N. Houghton, BS, Boston, MA*

*Christoph T. Hutchinson, BA MA, Boston, MA*

*Kenneth M. Grundfast, MD FACS\*, Boston, MA*

*Scott R. Schoem, MD, Hartford, CT*

*Mark S. Volk, MD DMD FACS, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to gain awareness of the various kinds of lesions that can manifest in the floor of the mouth of a fetus or newborn and learn options for management of these lesions.

**Objectives:** The intent of this case review is to describe the presentation and management of a ranula before and at birth in comparison to those congenital floor of mouth lesions that resemble a ranula but ultimately are diagnosed as different lesions on the basis of histopathology. **Study Design:** This study is a retrospective chart review of cases managed at three urban academic medical centers from 2001 to 2006. **Methods:** The initial presentation and management of five cases of congenital oral cysts were reviewed and compared. **Results:** Congenital floor of mouth lesions include ranula and other rarely encountered lesions such as enterogenous cyst and glioma. Oral cavity embryology is reviewed and pathogenesis of floor of mouth cysts and lesions is described. Guidelines for case management are provided including use of an EXIT procedure for airway control during birth after antenatal diagnosis of a cystic lesion with likely severe airway obstruction, cyst aspiration, biopsy of noncystic lesions, surgical intervention timing, and advisability of nasotracheal intubation for optimum lesion visualization during surgery. **Conclusions:** Congenital oral/floor of mouth lesions are uncommon but challenging to diagnose and manage. The lesions can cause airway obstruction, feeding problems, or both. Keys to successful management are: understanding embryology and pathogenesis, early detection using appropriate antenatal diagnostic modalities, surgical intervention when conservative methods fail, and utilization of nasotracheal intubation. A classification system is provided to help understand how these lesions present as fetal development goes awry and a paradigm for case management is offered.

## E16. Eagle's Syndrome—Myth or Reality?

*Scharukh Jalisi, MD, Boston, MA*

*Alphi P. Elackattu, MD, Boston, MA (Presenter)*

*Gregory A. Grillone, MD, Boston, MA*

*David Cottrell, DMD, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to 1) understand skull base anatomy and pathophysiology of Eagle's syndrome; 2) identify new radiological imaging techniques; and 3) demonstrate understanding of the diagnosis and management of Eagle's syndrome.

**Objectives:** Eagle's syndrome is a rare cause of otalgia and dysphagia caused by an elongated styloid process or calcified stylohyoid ligament. It is important to appropriately diagnose and manage this sometimes debilitating condition. Our objective in this study is to describe the natural history of this rare syndrome, use of modern radiological imaging for diagnosis and current techniques for treatment. **Study Design:** Retrospective chart review. **Methods:** A cohort of three patients with elongated styloid processes was identified. Those that were symptomatic underwent diagnosis with 3 dimensional CT scan reconstruction, panoramic view X-Ray and physical examination. Surgical intervention was either intraoral or external surgical approach. The patients had a minimum followup of 3 months. **Results:** Surgical intervention for elongated styloid process or calcified stylohyoid ligament resulted in resolution of symptoms. **Conclusions:** Eagle's syndrome is a rare entity that can be debilitating. New embryological studies provide some insight into understanding early development and why some may be more prone to developing Eagle's syndrome. There is also epidemiological studies that give strong evidence that it's not merely an elongated styloid or calcification alone that lead to the symptoms described. The adequate diagnosis and treatment can alleviate the symptoms of these patients.

---

## E17. Intraoperative Monitoring of the Recurrent Laryngeal Nerve Using "Double" Intralaryngeal Surface Electrodes: A Novel Technique

*Samuel Johnson, MSc, Hershey, PA*

*David Goldenberg, MD, Hershey, PA (Presenter)*

*Fred G. Fedok, MD, Hershey, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the benefits and pitfalls of intraoperative neural monitoring (IONM) of the recurrent laryngeal nerve (RLN) and the advantages of our novel technique.

**Objectives:** Recurrent laryngeal nerve (RLN) injury is a known risk of thyroid surgery. In cases of malignant neoplasms, substernal goiter, and revision surgery, the potential for iatrogenic RLN injury increases significantly. Although many surgeons rely solely on their expert knowledge of anatomy to successfully identify the RLN, intraoperative neuromonitoring (IONM) can provide an extra level of safety particularly in difficult cases. Several monitoring techniques have been developed to monitor the RLN. Our technical setup consists of "double" disposable intralaryngeal surface electrodes (Neurovision Medical Products, Ventura, CA) that are placed in a serial fashion on the distal end of the endotracheal tube (ET). In most IONM setups only one electrode is used. With one electrode there is the possibility that the electrode is not properly placed between the vocal folds or that the electrode migrates during manipulation. This may lead to inaccurate readings and potential inadvertent RLN injury. The inherent advantages of using our "double electrode" technique is more usable surface area on the ET tube which helps guard against the migration of the ET tube when the tube is being secured or during the course of surgery. Secondly our technique allows us to acquire "side specific" RLN information by linking the contacts of the two electrodes that lie on the same side. In addition the use of two disposable surface electrodes is still significantly less expensive than the commercially available integrated neural monitoring ET tubes. **Study Design:** Novel technique description. **Methods:** The technical setup consists of "double" disposable intralaryngeal surface electrodes (Neurovision Medical Products, Ventura, CA) that are placed in a serial fashion on the distal end of any endotracheal tube (ET) prior to head and neck endocrine surgery. **Results:** This technique offers more usable monitoring surface area on the ET tube which helps guard against the migration of the ET tube during the course of surgery. Secondly this technique allows us to acquire "side specific" RLN information by linking the contacts of the two electrodes that lie on the same side. The use of two disposable surface electrodes is still significantly less expensive than the commercially available integrated neural monitoring ET tubes. **Conclusions:** Intraoperative neuromonitoring (IONM) of the recurrent laryngeal nerve can provide an extra level of safety. The novel technique presented here allows for more accurate and consistent noninvasive RLN neural monitoring system during head and neck endocrine cases.

---

## E18. Interactive Internet Based Cases for Undergraduate Otolaryngology Education

*Thileeban Kandasamy, London, ON Canada*

*Michael G. Brandt, BSc MD, London, ON Canada (Presenter)*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to explain the numerous benefits of internet based cases in pre-clerkship undergraduate otolaryngology education, compare this modality with more traditional self-study material, and discuss the cost and resources required to create multiple CAI modules.

**Objectives:** To compare the feasibility and effectiveness of case based computer assisted instruction (CAI) with online text articles in pre-clerkship undergraduate otolaryngology education. **Study Design:** Prospective, randomized, controlled trial. **Methods:** Second year medical students at our institution (n=133) were asked to participate. Students were randomized into two groups: Group A was given an online CAI module and Group B was presented with two online review articles, both covering specified learning objectives for pediatric stridor. Prior to and following completion of the self-study material, students completed pre- and post-tests respectively and a questionnaire one week later. **Results:** 55 students completed the study with 28 in Group A and 27 in Group B. Mean pre-test scores were 59.1% in Group A and 59.8% in Group B and were equivalent ( $p=0.95$ , 95% CI = -7.9% to 10.4%). Mean post-test scores were significantly elevated in Group A (84.6%,  $p<0.001$ ) and Group B (74.3%,  $p=0.008$ ). Group A group had a significantly higher mean post-test score than Group B ( $p=0.02$ ) with a mean difference of 10.2%. Students spent significantly more time ( $p<0.001$ ) reading text articles (25.5 minutes) than completing the CAI module (9.06 minutes). 41 students (66%) participating in the study completed the survey. 36 respondents (88%) indicated that they preferred CAI modules over online articles for self-directed learning. **Conclusions:** Case based CAI modules are more effective and efficient than online text in enhancing self-directed learning as supplementation to the pre-clerkship undergraduate otolaryngology curriculum. Multiple CAI modules can be created using preexisting resources without the need for specialized software and web developers.

---

## E19. The Residency Experience in Pediatric Otolaryngology

*Kara Kerscher, BA, New York, NY*

*Abtin Tabaei, MD, New York, NY*

*Joseph Haddad Jr., MD\*, New York, NY*

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

*Eli Grunstein, MD, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the current status of the resident experience in pediatric otolaryngology, impact of pediatric fellowship programs on residency training and role of fellowship training in pediatric otolaryngology.

**Objectives:** To assess the residency experience in pediatric otolaryngology, determine the impact of pediatric fellowship programs on residency training, and evaluate the need for fellowship training in pediatric otolaryngology. **Study Design:** An anonymous, web based survey of chief residents in otolaryngology was performed. **Methods:** Respondents described their experiences in pediatric otolaryngology using a 5 point Likert scale and reported their comfort levels (yes/no) with various medical and surgical issues in pediatric otolaryngology. **Results:** The majority of the 70 respondents reported positive experiences with regard to the following aspects of pediatric otolaryngology training: didactics (81%), clinical research opportunities (78%), positive faculty role models (87%), career mentorship (74%), independent medical (84%) and surgical (81%) decision making, and overall comprehensive residency experience (87%). Basic science research opportunities (50%) were significantly less available than were clinical research opportunities (78%) ( $p=0.002$ ). Compared to other surveyed issues a lower rate of comfort was reported for management of craniofacial anomalies ( $p<0.001$ ), excision of large lymphatic malformations ( $p<0.001$ ), cochlear implantation ( $p<0.001$ ), laryngotracheal reconstruction ( $p<0.001$ ), and surgical correction of velopharyngeal insufficiency ( $p<0.001$ ). No statistically significant difference was noted in responses based on the presence of a fellowship program at the institution. **Conclusions:** The residency experience in pediatric otolaryngology is perceived as comprehensive by graduating chief residents participating in this survey. The presence of a fellowship program does not seem to negatively impact the residency experience. Based on the reported comfort levels the management of complex issues in pediatric otolaryngology may require additional training.

---

## E20. Intratracheal Ectopic Thyroid Tissue Resulting in Airway Obstruction

*Ayesha N. Khalid, MD, Hershey, PA*

*Gregory L. Craft, MD, Hershey, PA*

*Renee F. Goldenberg, MD, Baltimore, MD*

*William Todd, MD, Hershey, PA*

*David Goldenberg, MD, Hershey, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the complex man-

agement issues related to airway obstruction from intratracheal lesions.

**Objectives:** 1) Understand the incidence and clinical presentation of benign intratracheal lesions; and 2) explain treatment strategies for intratracheal lesions leading to airway obstruction. **Study Design:** Case report and literature review. **Methods:** The presentation, imaging, and histopathologic findings and course of this case are presented and the implications are discussed. **Results:** We present the case of a 45 year old female who came to the emergency department with severe dyspnea that resulted in an emergent intubation. She was found to have a subglottic mass on CT scan imaging of the neck. **Conclusions:** Thyroid tissue in the trachea is a rare etiology of airway obstruction in an adult. These ectopic thyroid masses in the trachea are usually benign and most often present with airway obstruction. Excision and biopsy was carried out through micro-direct laryngoscopy with excision of a posterior tracheal wall mass. She was extubated and did well without the need for a tracheostomy. Histopathologic examination revealed benign thyroid tissue with no evidence of carcinoma. The patient has no evidence of any extrinsic thyroid tumor carcinoma at this time.

---

## E21. Surgeon Exposure to Ionizing Radiation during Balloon Catheter Sinus Ostial Dilation

*Howard L. Levine, MD\*, Cleveland, OH*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to appreciate the amount of radiation exposure to skin, deep tissue and lens of eye from balloon catheter sinus ostial dilation and relate this to environmental radiation.

**Objectives:** Advancements in endoscopic sinus surgery include minimally invasive balloon catheters used for sinus ostial dilation. Currently balloon catheters are positioned under endoscopic and fluoroscopic visualization which utilizes ionizing radiation. The study objectives determine radiation exposure to surgeons during balloon catheter dilation and track average fluoroscopy time per patient. **Study Design:** A single center, retrospective evaluation of surgeon and patient radiation exposure was conducted. **Methods:** Surgery center protocol required the surgeon to wear a dosimeter recording radiation exposure when using C-arm fluoroscopy. Dosimeters were placed at collar level outside the lead surgical apron. These dosimeters were sent for quarterly readings. Total, shallow, deep, and lens radiation dose for the surgeon and average fluoroscopy time per patient were calculated. **Results:** In 2006 cumulative surgeon radiation exposure was 42 mrem (42 patients) and for 2007 year to date with increased case complexity 135 mrem (27 patients). In 2006 average fluoroscopy time per patient was 45 seconds and for 2007 year to date 88 seconds. **Conclusions:** Despite learning curve associated with use of balloon catheter instruments to dilate sinus ostia, use of fluoroscopy as adjunctive visualization tool exposes surgeon to very low doses of radiation. The surgeon radiation exposure values are significantly below the annual occupational radiation exposure limit (Shallow Dose Equivalent) of 50,000 mrem. As surgeons gain more experience with these instruments radiation risks are further minimized through cautious technique and education.

---

## E22. The Ferret as an Animal Model for Injection Laryngoplasty

*Gerardo Lopez Guerra, MD, Boston, MA*  
*James T. Heaton, PhD, Boston, MA*  
*James B. Kobler, PhD, Boston, MA*  
*Hyoungshin Park, PhD, Boston, MA*  
*Yoshihiko Kumai, MD PhD, Boston, MA*  
*Steven M. Zeitels, MD\*, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to develop and describe a practical in vivo small animal model to study injectable vocal fold implant materials.

**Objectives:** Substantial advancements in chemical and tissue engineering have led to numerous new vocal fold implant materials. Therefore a small animal model is valuable for analyzing these substances. **Study Design:** Measurements of ferret glottal anatomy were obtained to assess structural similarities to humans. Additionally we developed microlaryngoscopic surgical instruments and techniques for vocal fold injection as part of ongoing investigations of implant substances. **Methods:** Glottal dimensions were measured for 5 male adult ferrets using a three dimensional digitizing system and calipers. Forty-four injections of fat and/or adipocyte derived stem cells and 88 injections of biomaterials were performed in 104 animals. Other instruments and surgical techniques were refined to develop reliable injection methods. Outcomes were analyzed histologically and with high resolution MRI. **Results:** The average full length of the vocal fold was 7.5mm (+/- 0.4mm), cartilaginous (arytenoid) region was 2.8mm (+/- 0.2), and musculomembranous region 4.7mm (+/- 0.2). Adequate microlaryngoscopic exposure was obtained in all subjects and a successful injection was done in 132/133. A self-retaining nasal speculum was modified by narrowing and bending the tips to serve as a bivalve laryngoscope. High resolution MRI and semi-serial paraffin sections have proven ideal for histological analysis and reconstruction of injection site volumes. **Conclusions:** The ferret larynx is remarkably comparable to the human (though about ¼ the size) and anatomical measurements confirm that the vocal folds are proportion-

ally similar. Laryngoscopic exposure for precise injections are easily obtained with a nasal speculum. Given the current proliferation of implants for the paraglottic space and future prospects for the mucosa, this species provides a robust and economical model for screening implants.

---

## E23. Podcasts in Otolaryngology

*Lily Love, MD, New York, NY*

*Anthony Reino, MD\*, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to 1) be updated on information technology; 2) learn the basics of how to obtain podcast information; 3) learn how to create and publish their own podcasts; and 4) review issues associated with podcasting including potential uses in practice (private and academic) legal matters, and forums for publication.

**Objectives:** Podcasts represent a new way of transmitting information over the internet. Only over the last few years has this means of technology come in to the mainstream. The basic premise is that pieces of media (audio, visual, or audiovisual/video) are available on the internet. This may be downloaded to a PC or this data can be retrieved online. A personal media device such as an iPod is necessary to synchronize and upload the data. The original files are continually updated so with each synchronization, the media device automatically will have the most up to date information. The potential applications of this are vast and it can serve as a useful tool in education and information sharing in otolaryngology. **Study Design:** N/A. **Methods:** N/A. **Results:** N/A. **Conclusions:** N/A.

---

## E24. A Rare Follicular Carcinoma in the Setting of Thyroid Sarcoidosis

*Prashant S. Malhotra, MD, Philadelphia, PA*

*Lisa Hamaker, MD, Philadelphia, PA*

*Barry J. Goldstein, MD, Philadelphia, PA*

*Edmund A. Pribitkin, MD\*, Philadelphia, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the multiple associations of sarcoidosis and the thyroid and become familiar with this newly reported one.

**Objectives:** Case report. **Study Design:** Case report. **Methods:** Case report. **Results:** Case report. **Conclusions:** We present a case of a 76 year old woman with multi-organ sarcoidosis and a history of a thyroid mass that recently increased in size. Previous thyroid workup had been negative. At time of presentation, FNA biopsy revealed suspicious cytology and the patient underwent total thyroidectomy and paratracheal neck dissection. Pathology surprisingly revealed thyroid sarcoidosis and large 3cm angioinvasive follicular carcinoma. An association of thyroid sarcoidosis and papillary thyroid cancer has been reported in the literature, but this is the first case report of follicular carcinoma in the background of thyroid sarcoidosis.

---

## E25. Papillary Thyroid Microcarcinoma: A Review of 241 Patients

*Benjamin D. Malkin, MD, New York, NY*

*Donald A. Bergman, MD, New York, NY*

*Jeffrey I. Mechanick, MD, New York, NY*

*Eric M. Genden, MD, New York, NY*

*Mark L. Urken, MD, New York, NY*

*Margaret Brandwein-Gensler, MD, Bronx, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to explain the pathologic characteristics of papillary thyroid microcarcinoma and identify features that are associated with metastatic disease.

**Objectives:** In this study we review the clinicopathologic features of papillary thyroid microcarcinoma (PTMC) and identify characteristics that differentiate tumors with lymph node metastases from those limited to the thyroid gland. **Study Design:** This study is a retrospective review of pathology slides and patient files. **Methods:** The pathology files from a tertiary care institution were searched for all cases of PTMC over a 10 year period. Histological slides were reviewed and diagnoses confirmed. SAS software was used for logistic regression analyses. **Results:** Two hundred and forty-one patients with PTMC were identified. Thirty-seven (15%) patients presented with PTMC associated with cervical lymph node metastases. Of the remaining 204 cases 144 had isolated PTMC while 60 had a separate focus of papillary thyroid carcinoma larger than 1 cm. Lymph node metastases were significantly associated with primary lesions with extrathyroid spread, multifocality, size larger than 5 mm and solid or sclerotic histology. On logistic regression analysis extrathyroid spread was the only determinant to remain statistically

significant ( $p = 0.026$ ). The locoregional recurrence rate for metastatic PTMC was 15%, whereas no patient who originally presented without metastases developed recurrent disease. **Conclusions:** Cervical lymph node metastases from PTMC are not uncommon and are associated with extrathyroid spread of the primary tumor. When papillary thyroid carcinoma is found in cervical lymph nodes along with a clinically normal thyroid, total thyroidectomy should be performed as these PTMC tumors are oncologically distinct entities and have a small but distinct propensity for locoregional recurrence.

---

## **E26. Case Series of Pediatric Intranasal Lobular Capillary Hemangioma and One Subcutaneous Nasal Dorsum LCH Mimicking Dermoid Cyst**

*Jeremiah J. Moles, MD, Newark, NJ (Resident Travel Award)*

*Huma A. Quraishi, MD, Newark, NJ*

*Neena M. Mirani, MD, Newark, NJ*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to differentiate between lobular capillary hemangioma and pyogenic granuloma based on histologic criteria.

**Objectives:** Lobular capillary hemangioma and pyogenic granuloma are separate clinical entities though they are often referred to synonymously. **Study Design:** Case series of three of intranasal lobular capillary hemangiomas and one subcutaneous LCH of the nasal dorsum mimicking a dermoid cyst. **Methods:** Histologic analysis of surgical specimens with comparison to cases of previously documented pyogenic granuloma. **Results:** Lobular capillary hemangioma (LCH) and pyogenic granuloma (PG) are typically referred to interchangeably; they are clinically and histologically distinct from one another. **Conclusions:** LCH is a neoplastic proliferation with a lobular architecture, while PG is an inflammatory process, similar to granulation tissue, and with a radial architecture.

---

## **E27. Pediatric Rhabdomyosarcoma in an Oronasal Fistula in a Repaired Cleft Palate**

*Jeffrey J. Nelson, MD, Syracuse, NY (Resident Travel Award)*

*Sherard A. Tatum, MD, Syracuse, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to include rhabdomyosarcoma in a differential diagnosis for pediatric head and neck tumors, including its diagnostic workup, treatment options and followup care.

**Objectives:** Rhabdomyosarcoma (RMS) is a rare soft tissue tumor affecting approximately 300 children per year in the United States. In this case report we present a RMS found incidentally in a oronasal fistula of a repaired cleft palate which has yet to be reported in the literature. In addition we review the diagnosis and treatment of rhabdomyosarcoma of the head and neck. **Study Design:** Case report and literature review. A 3 year old male presented with a oronasal fistula status post cleft palate repair at an outside facility. During the uncomplicated closure a small piece of excess tissue was removed from the fistula site and sent for routine pathology. The results showed embryonal RMS. **Methods:** Physical examination, CT and MRI scans, nasal endoscopy and pathology were utilized to establish a definitive diagnosis. **Results:** The patient is undergoing chemotherapy and radiation at this time. **Conclusions:** Pediatric RMS of the head and neck is a rare entity in which lesions of the orbit, parameningeal of other locations require biopsy for definitive diagnosis. These often are surgically unresectable with margins due to proximity to vital structures and potential disfigurement of the face. Although surgery is definitive therapy for resectable lesions, chemotherapy +/- radiation are the current standard of care which have ameliorated the survival from less than 20% in the 1960s to greater than 70% survival today. Routine pathology should be reviewed carefully as unsuspected tissues may have pathologic findings which dramatically affect patient diagnosis and management.

---

## **E28. Non-Hodgkin's Lymphoma Presenting as a Post-Traumatic Forehead Mass**

*Nora W. Perkins, MD, Albany, NY*

*Steven M. Silver, MD, Albany, NY*

*C. Y. Lee, MD, Albany, NY*

*Stephen P. Smith Jr., MD, Columbus, OH*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the typical presentation of extranodal non-Hodgkin's lymphoma in the head and neck. Participants will also have reviewed the histopathologic presentation of this disease process and current diagnostic and treatment recommendations.

**Objectives:** The objective of this study is to discuss an unusual presentation of non-Hodgkin's lymphoma while also allowing for review of the more common presentations of extranodal non-Hodgkin's lymphoma in the head and neck. Additionally the histopathologic evaluation of this disease and current diagnostic and treatment recommendations will be discussed. **Study**

**Design:** The report will be presented as a case study. **Methods:** This study involves the review of a single case; particularly the clinical and radiologic preoperative evaluation, intraoperative findings, histopathologic evaluation, and postoperative treatment and outcome. **Results:** A 71 year old man presented to our clinic with a 3 month history of a slowly enlarging forehead mass, presenting after minor trauma sustained to that region. The patient underwent computed tomography scan which revealed a 3x1 cm mass within the soft tissue of the right forehead, associated with an area of erosion of the outer calvarium. The patient was then referred to the facial plastic surgery clinic for further evaluation and treatment. The patient underwent excision of the forehead mass using a limited bicoronal approach for optimal aesthetic results. Histopathologic interpretation revealed non-Hodgkin's lymphoma, without any involvement of the bone. Postoperatively the patient had a very successful aesthetic result, however at a subsequent followup appointment a recurrent forehead mass was noted. Positron emission tomography (PET) revealed hypermetabolic activity in the forehead only. The patient underwent chemotherapy with attenuated dose cyclophosphamide, doxorubicin, vincristine and prednisone (CHOP) due to liver function abnormalities. He has had complete clinical remission of his disease. **Conclusions:** Extranodal non-Hodgkin's lymphoma of the head and neck may present in an unusual manner. Current recommendations regarding diagnostic evaluation and treatment are reviewed.

---

## E29. Parotid Mass in a Woman with Multiple Cutaneous Cylindromas

*Andrew R. Scott, MD, Boston, MA*  
*William C. Faquin, MD PhD, Boston, MA*  
*Daniel G. Deschler, MD, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to demonstrate familiarity with familial autosomal dominant cylindromatosis (FADC) and its relevance in regard to evaluating patients with coexisting cutaneous and salivary gland lesions. Participants should be able to discuss the cytologic and histologic characteristics of salivary basal cell adenoma, and demonstrate an understanding of the surgical management of these tumors.

**Objectives:** 1) To familiarize the reader with familial autosomal dominant cylindromatosis (FADC) and its relevance in regards to evaluating patients with coexisting cutaneous and salivary gland lesions; 2) to review the cytologic and histologic characteristics of salivary basal cell adenoma, including differential diagnosis with adenoid cystic carcinoma; and 3) to discuss the surgical management of basal cell adenomas. **Study Design:** Retrospective chart review and review of the literature. **Methods:** Case report and review of the literature. **Results:** Familial autosomal dominant cylindromatosis (FADC) is a rare disease characterized by multiple cutaneous cylindromas, trichoepitheliomas, and spiradenomas. An association between FADC and membranous basal cell adenoma of the salivary glands has been described. We present a case of a woman with scalp lesions and a parotid mass. Biopsy of a skin nodule demonstrated cylindroma and fine needle aspiration of the parotid mass suggested membranous basal cell adenoma. Histologic examination following superficial parotidectomy confirmed the diagnosis. Eighteen cases of cylindromatosis with coexistent salivary gland membranous basal cell adenoma have been reported. Seventeen cases involved the parotid gland; there are two reports of malignant transformation. **Conclusions:** FADC should be considered in anyone with coexistent dermal and salivary gland neoplasms. Membranous basal cell adenoma may be mistaken for adenoid cystic carcinoma on cytologic or histologic examination. Total parotidectomy with facial nerve preservation or superficial parotidectomy with close followup is recommended, as multifocality and malignant transformation exist.

---

## E30. Pleomorphic Adenoma of the External Auditory Canal

*Shrenik Shah, MSIV, Albany, NY*  
*Scott L. Lee, MD, Albany, NY (Presenter)*  
*Ameera Ali, MD, Albany, NY*  
*David Foyt, MD, Albany, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to recognize the clinical findings of an external auditory canal pleomorphic adenoma, discuss the histology, and demonstrate an understanding of the importance of a correct diagnosis and management.

**Objectives:** Pleomorphic adenoma is a rare neoplasm of the external auditory canal (EAC). These tumors are a subtype of the ceruminous gland neoplasms, which also include ceruminous adenomas and syringocystadenoma papilliferum. Histologically ceruminous gland tumors demonstrate tubuloglandular ceruminous proliferation in a stroma of mixed composition. **Study Design:** Case report and literature review. **Methods:** A case of pleomorphic adenoma of the EAC is reported with a review of the clinical, audiological, radiographical, and histological findings. **Results:** A 51 year old woman presented with an asymmetric left sided hearing loss and dizziness. She was found to have a round soft tissue lesion in the cartilaginous canal. A temporal bone CT demonstrated no bony erosion. An excisional biopsy was performed and confirmed a pleomorphic adenoma. **Conclusions:** Pleomorphic adenomas of the EAC are rare and a correct diagnosis is essential. An incomplete office biopsy may lead to a local recurrence. Malignant transformation has been documented in the salivary and lacrimal glands and

it may have the potential to do so in the EAC.

---

## E31. Post-Total Thyroidectomy Iatrogenic Hypercalcemia

*Ashok R. Shaha, MD\*, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the complications of thyroid surgery and how to avoid the rare complication of iatrogenic hypercalcemia.

**Objectives:** Temporary or permanent hypoparathyroidism after total thyroidectomy may occur in 30% and 2% respectively. Postoperative hypoparathyroidism is generally treated with intravenous calcium and discharged home with oral calcium and vitamin D. One of the unpredictable complications of calcium replacement is iatrogenic hypercalcemia, which should be avoided. **Study Design:** Retrospective study. **Methods:** Over the past 10 years the author has seen 6 patients who underwent thyroidectomy and developed iatrogenic hypercalcemia, due to excessive placement of calcium and mainly vitamin D. After the total thyroidectomy patients with low calcium levels (below 7.5) are discharged home with 4-6 grams of calcium and 0.5 IU of vitamin D, twice a day. **Results:** Six patients developed hypercalcemia due to increased ingestion of calcium and vitamin D, with serum calcium levels ranging between 11–14 mg/dl. Symptoms related to hypercalcemia included agitation, confusion, severe fatigue, and weakness. Half of these patients ended up in another hospital in the emergency room. All of the patients improved by withholding calcium and intravenous saline infusion. The other 3 patients were maintained on an outpatient basis with a visit to the emergency room. All of the patients subsequently became eucalcemic with cessation of calcium and oral supplementation. **Conclusions:** Close postoperative follow up is required to avoid iatrogenic hypercalcemia. Even though rare every thyroid surgeon should be aware of this possible complication and should perform frequent checks of serum calcium levels to avoid iatrogenic hypercalcemia.

---

## E32. Patient Satisfaction with Cosmetic Outcome of Sternocleidomastoid Muscle Flap Reconstruction of Parotid Surgery Defects

*Michael C. Singer, MD, New York, NY (Resident Travel Award)*

*Gady Har-El, MD\*, New York, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the possible subjective cosmetic benefits of SCM flap reconstruction for parotidectomy defects. The poster will also explain the approach for this flap reconstruction.

**Objectives:** To assess the patients' perspective of cosmetic outcomes following parotid gland surgery with reconstruction using a sternocleidomastoid muscle (SCM) flap. **Study Design:** A retrospective analysis of 36 consecutive cases of parotid gland surgery with SCM flap reconstruction performed from 2001 through 2006. **Methods:** All patients completed a battery of questions which assessed their perception of postsurgical facial symmetry, operative site deformity, and scarring. **Results:** A total of 36 patients, undergoing resection, ranging from total parotidectomy to superficial parotidectomy, and reconstructed with an inferiorly or superiorly based or bipedicle SCM flap, were queried. The patients, 16 women and 20 men, ranged in age from 19-84 years old with a mean age of 51.4 years. Bipedicle flaps were used for reconstruction in 86% (31/36) of the cases reviewed. Surgery was performed for benign pathology in 23 cases and for malignant disease in 13 cases. 30/36 patients reported a symmetrical frontal, facial appearance. On a scale from 1 to 5, describing the degree of smoothness of the operative site (ranging from major deformity to no depression at all), the overall average score was 4.54. The resulting scar was described, on average, as a 4.31, on a scale of 1 to 5 (significant scar to no noticeable scar). **Conclusions:** Reconstruction of parotidectomy defects with SCM flaps is an operative technique which provides a majority of patients with a subjective satisfactory cosmetic outcome.

---

## E33. Topical Lidocaine as a Sole Anesthetic for Closed Reduction of Nasal Fractures in the Office Setting

*Jeffrey H. Spiegel, MD, Boston, MA*

*Rima D. Patel, BS, Boston, MA (Presenter)*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to 1) identify different options for anesthesia, procedural settings, and methods of fixation in the closed reduction of nasal fractures (CRNF); 2) discuss current trends in CRNF among otolaryngologists in the USA; and 3) understand the benefits of using topical lidocaine/epinephrine spray instead of topical intranasal cocaine or lidocaine/epinephrine injection for anesthetic during CRNF.

**Objectives:** Demonstrate that lidocaine/epinephrine used solely as a topical anesthetic provides adequate comfort and improved safety and cost for CRNF. **Study Design:** Three part protocol: 1) retrospective review of 80 patients undergoing CRNF with topical lidocaine anesthesia; 2) survey of patients' perceptions of procedure comfort; and (3) survey of common prac-

tice by US otolaryngologists for CRNF. **Methods:** 1) Chart review of all CRNF procedures by a single surgeon assessing anesthetic, setting, methods, and complications. 2) The McGill Pain Questionnaire was administered to patients to assess their perceived comfort during CRNF in the office using only topical lido/epi anesthetic. 3) A survey of practicing US otolaryngologists to determine common practice in anesthesia and setting of CRNF. **Results:** Topical lidocaine is a favorable anesthetic approach for CRNF in an office setting with associated safety and cost advantages. Normative data for practice standards are presented. **Conclusions:** Topical lidocaine is a preferred first line anesthetic for CRNF. Comfort, safety, and cost are equal or enhanced with this method.

---

## E34. Familial Thymic Cyst Presenting as Branchial Cleft Cyst

*Erik D. Steiniger, MD, Albany, NY*  
*Jason Mouzakes, MD, Albany, NY*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to discuss the rare occurrence of familial cervical thymic cysts in addition to surgical complications and pitfalls.

**Objectives:** To report on presentation of familial cervical thymic cyst. Thymic cysts are considered uncommon lesions in the differential diagnosis of head and neck masses. Cervical thymic cysts are exceptionally rare, accounting for fewer than 100 cases in the literature. Even more uncommon is the occurrence of familial thymic cysts, as only one other report is encountered in the literature. Two cases of cervical familial thymic cyst have recently presented to our institution, encountered in sisters. Possible complications and pitfalls of surgical excision are discussed, as well as a review of the current literature. **Study Design:** Retrospective chart review. **Methods:** Charts of two sisters with cervical thymic cyst were reviewed as well as the pertinent body of literature. **Results:** Both patients involved an initial presentation consistent with branchial cleft cyst. The elder sister had a cystic neck mass removed at an outside institution and a pathologic diagnosis of branchial cleft remnant was achieved. The younger sister presented to our clinic also with a cystic neck mass. Upon surgical excision cervical thymic cyst was the diagnosis, prompting a second examination of the elder sister's specimen. Only after a second review of the excised histologic specimen was the correct diagnosis attained. **Conclusions:** Cases of familial cervical thymic cyst are rare however should be considered in the differential of cystic neck masses.

---

## E35. Primary Laryngeal Amyloidosis

*Jared M. Wasserman, MD, Boston, MA*  
*Robert D. Murgia III, BA, Boston, MA*  
*Ramon A. Franco Jr., MD, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to differentiate localized from systemic amyloidosis. In addition we will describe the presentation of localized laryngeal amyloidosis and specify subsite involvement. Different treatment modalities will be discussed as well as the need for strict patient follow.

**Objectives:** To describe the clinical course of amyloidosis localized to the larynx. Attention is focused towards initial presentation, options for treatment and need for routine followup. **Study Design:** Retrospective chart review of patients with amyloidosis localized to the larynx. **Methods:** Data spanning ten years was collected and included in the study. Patients with systemic amyloidosis or primary disease not involving the larynx were excluded. **Results:** Six subjects were included in the study. There were four males and two females. Ages ranged from 37-75 years. All patients presented with dysphonia. The supraglottis and glottis were the most common sites involved. Treatment consisted of cold knife and CO2 laser excision. The pulse dye laser was used as an adjunct to the primary treatment. Five of six patients developed recurrent disease requiring intervention. **Conclusions:** Localized, primary laryngeal amyloidosis is a rare entity and its diagnosis requires a high degree of suspicion. Patients typically present with progressive dysphonia and dyspnea. Diagnosis is made by histologic analysis with Congo red staining. Treatment options include cold instrument and CO2 laser excision. The pulse dye laser is a novel adjunct to the armamentarium. Local recurrence is common and patients may require multiple excisions.

---

## E36. Laryngeal Hematoma as a Complication of Warfarin and Azithromycin Use

*Johnathan M. Winstead, MD, Danville, PA*  
*J. Scott Greene, MD, Danville, PA*  
*W. Edward Wood, MD, Danville, PA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to identify macrolide antibiotics as a potentiator of Warfarin's anticoagulant effects. They should also be able to identify and treat upper airway obstruction due to laryngeal hematoma.

**Objectives:** To report a case of a near obstructing laryngeal hematoma in a patient on stable warfarin therapy after addition of azithromycin as well as review the current literature on warfarin azithromycin interaction. **Study Design:** Retrospective case report. **Methods:** Case report and review of the current literature. **Results:** A combination of elevated INR from over-anticoagulation with a persistent cough produced a near obstructing laryngeal hematoma in our patient. Video imaging of her larynx was obtained immediately prior to awake fiberoptic intubation. After treatment with fresh frozen plasma and vitamin K, the patient's INR normalized, and following intubation for several days her laryngeal hematoma began to resolve. Ten days later her larynx was completely normal in appearance on videostroboscopy. **Conclusions:** Warfarin's anticoagulant effects can be potentiated by the use of macrolide antibiotics including azithromycin. Hematoma of the larynx in this situation can be life threatening and requires urgent management of the over-anticoagulation and the airway.

---

## E37. Odontogenic Infection Presenting as a Submandibular Fistula

*Cory C. Yeh, MD, Boston, MA*

*Daniel G. Deschler, MD FACS, Boston, MA*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to develop a differential diagnosis for submandibular fistulas and be familiar with the diagnostic workup and management of this condition.

**Objectives:** 1) Present a series of patients with submandibular fistulas originating from odontogenic disease; and 2) review the available literature to provide an understanding of the pathophysiology, imaging characteristics, differential diagnosis, and management strategies for this condition. **Study Design:** Clinical case series. **Methods:** Clinical case series with history and physical exam, imaging, pathology, and treatment reviewed for patients presenting between October 1, 2005, to July 1, 2006, to an academic tertiary care head and neck surgery clinic. Literature search using PubMed search keywords: "submandibular mass or fistula" and "odontogenic infection", and review of all citations generated. **Results:** Two patients who presented with a chronic draining fistula in the submandibular space were identified. Both patients had intact dentition and no evidence of dental symptoms or disease on physical exam. Management prior to referral failed to diagnose the underlying disorder despite otolaryngology evaluation, neck CT scan imaging, fine needle aspiration, and in the case of one patient, surgical exploration. A definitive diagnosis of odontogenic pathology was made only after performing a dedicated mandibular CT scan and Panorax radiography. In both cases a periapical mandibular abscess with an orocutaneous fistula tract was found. Treatment consisted of oromaxillofacial evaluation and mandibular molar extraction. **Conclusions:** Persistent submandibular fistulas often pose a diagnostic challenge. Two patients were identified in which chronic submandibular fistulas developed due to primary odontogenic disease. Otolaryngologists should be familiar with this potential odontogenic complication and management should include a thorough dental evaluation and dedicated mandibular imaging.

---

## E38. Facial Nerve Hemangiomas

*Heng-Wai Yuen, MD, Toronto, ON Canada*

*Julian M. Nedzelski, MD FRCSC\*, Toronto, ON Canada*

**Educational Objective:** At the conclusion of this presentation, the participants should be able to understand the complex presentation of facial nerve hemangiomas and have a high index of suspicion for the diagnosis in patients with facial nerve and/or audiological symptoms. They would be able to discuss the typical radiological features of facial nerve hemangiomas. The differential diagnoses for facial nerve hemangiomas will be explained.

**Objectives:** To analyze the presenting symptoms, radiological features, pathology, surgical management and results of a series of patients with facial nerve hemangiomas. **Study Design:** Retrospective review. **Methods:** Chart reviews of patients diagnosed with facial nerve hemangiomas were performed. Surgical records, histopathology reports, radiological investigation and long term followup data were reviewed and analyzed. **Results:** A series of 7 patients over 20 years was reviewed to elucidate their symptoms, radiological features, surgical management, pathology and results. Six patients had ossifying hemangioma and one had nonossifying hemangioma. Most patients present with facial palsy which may be associated with hemifacial spasm. However some patients present with atypical symptoms such as isolated sensorineural hearing loss. Often a combination of typical features on CT and MRI is diagnostic. **Conclusions:** In our experience these tumors are less common than reported in the literature, and a high index of suspicion is necessary to make the diagnosis. Although complete surgical removal is usually achieved, the facial nerve often has to be sacrificed and repaired.

---