

EASTERN SECTION PROGRAM

FRIDAY, JANUARY 24, 2003

4:00 - **Registration** - Mezzanine Foyer
7:00

4:00 - **Speaker Ready Room** - Fairfield Room
7:30

6:00 - **Welcome/President's Reception** - Georgian/Arlington/Berkley/Clarendon Rooms
7:30

SATURDAY, JANUARY 25, 2003

7:00 - **Registration** - Mezzanine Foyer
5:00

7:00 - **Speaker Ready Room** - Fairfield Room
5:00

7:00 - **Business Meeting (Members Only)** - Cambridge Room, 4th Floor
7:50

7:00 - **Continental Breakfast with Exhibitors** -
7:50 Georgian/Arlington/Berkeley/Clarendon Rooms

8:00 - **Scientific Sessions** - Imperial Ballroom
5:35

8:00 **Welcome and Introduction of Roger L. Crumley, MD*, President**
Stanley M. Shapshay, MD*, Boston MA

8:05 **Presidential Address**
Roger L. Crumley, MD*, Irvine, CA

8:15 **Introduction of Guest of Honor, Gerald B. Healy, MD*, Boston, MA**
Stanley M. Shapshay, MD*, Boston, MA

8:20 **Guest of Honor Lecture: Board Certification in the 21st Century**
Gerald B. Healy, MD*, Boston, MA

**MODERATORS: MARK S. PERSKY, MD*, NEW YORK, NY, AND
RANDAL S. WEBER, MD*, PHILADELPHIA, PA**

8:40 **A Matched Survival Analysis for Squamous Cell Carcinoma of the Head and Neck in the Elderly**
Neil Bhattacharyya, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the influence of age on survival on head and neck squamous cell carcinoma and the need for matched survival analysis.

OBJECTIVES: Determine if elderly patients manifest poorer survivals for head and neck squamous cell carcinoma (SCC). **STUDY DESIGN:** Survey of the Surveillance, Epidemiology and End Results database for 1988-98. **METHODS:** Cases of SCC of the glottic larynx, oral tongue and tonsil were extracted. For each primary site, patients were segregated into age groups: 50-69 years and 70+ years. For each case in the elderly group, a reference group case was randomly matched for gender, year of diagnosis, cancer stage, extent of surgery and radiation therapy. Overall survival and disease specific survival were compared between the two groups with stage stratification with the Kaplan-Meier method. **RESULTS:** 1882, 426 and 200 cases of glottic carcinoma, tongue carcinoma and tonsillar carcinoma in the elderly were matched to the reference group. Overall mean survival differences were significant for glottic carcinoma (73.9 vs. 96.7 months, elderly and younger groups, respectively, $p < 0.001$) and tongue carcinoma (59.5 vs. 73.1 months, $p = 0.002$) but not for tonsillar carcinoma (46.0 vs. 54.4 months, $p = 0.220$). Disease specific survival differences were significant but small in magnitude for glottic carcinoma (105.9 vs. 114.1 months, $p < 0.001$) and tongue carcinoma (81.6 vs. 93.6 months, $p = 0.009$), but not for tonsillar carcinoma (71.5 vs. 70.7 months, $p = 0.422$). However, after stage stratification, elderly patients often did not exhibit statistically or practically significant poorer overall or disease specific survivals. **CONCLUSIONS:** Elderly patients do not necessarily exhibit clinically significant poorer survivals for head and neck SCC. Age criteria alone should not be used to determine treatment.

8:47 **Dysregulation of Hypoxia Inducible Factor-1alpha (HIF-1a) in Head and Neck Squamous Cell Carcinoma (HNSCC) Cell Lines Correlates With Invasive Potential**

Noam A. Cohen, MD, PhD+, Philadelphia, PA
Stephen Y. Lai, MD, PhD, Philadelphia, PA
Geza Acs, MD, PhD, Philadelphia, PA
Amy F. Ziober, JD, Philadelphia, PA
Barry L. Ziober, PhD, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the regulation of HIF-1a and its role in progression of Head and Neck Squamous Cell Carcinoma.

OBJECTIVES: Tumor hypoxia appears to be closely associated with tumor propagation, malignant progression, and resistance to radiotherapy. HIF-1a is a tran-

scription factor which is upregulated under hypoxic conditions and activates hypoxic adaptation pathways which include neovascularization, erythropoiesis, and glycolysis. HIF-1a is under tight regulation with undetectable levels of expression in normoxia, and robust expression in hypoxia. Mutations that activate oncogenes or inactivate tumor suppressor genes increase the expression of HIF-1a. Furthermore, it has been demonstrated that HIF-1a is overexpressed in HNSCC and that the degree of expression has predictive and prognostic significance for patients undergoing radiotherapy. This study investigates whether overexpression of HIF-1a results from a physiologic response to local hypoxia or from oncogenic mutational progression. **STUDY DESIGN:** Expression of HIF-1a, and Rac-1 (a GTPase that is an upstream regulator of HIF-1a), under normoxic and hypoxic conditions, were evaluated in cell lines derived from HNSCC. Cell lines utilized displayed varying degrees of in vitro invasiveness. **METHODS:** HIF-1a expression was detected by western blot analysis. Rac-1 activity was evaluated with GTPase pulldown assays. Cells were treated for 3 hours in 1% oxygen and then re-exposed to normoxia for varying times prior to lysis and detection of HIF-1a. **RESULTS:** We demonstrate that under normoxic conditions HIF-1a expression is upregulated in invasive cells compared to non-invasive cells and that the degradation of HIF-1a following a hypoxic stimulus is blunted in invasive cells as compared to non-invasive cells. Furthermore, Rac-1 is found to be activated in invasive cells as compared to non-invasive cells. **CONCLUSIONS:** We present evidence that mutational events in the malignant progression of HNSCC results in dysregulation of HIF-1a. This in the presence or absence of local tumor hypoxia may explain the increased expression of HIF-1a expression in advanced HNSCC.

8:54 Concurrent Chemoradiation for Advanced Squamous Cell Carcinoma of the Head and Neck: An Institutional Experience

Ronald M. Smith, Jr., MD, Danville, PA
Thomas L. Kennedy, MD*, Danville, PA
Philip K. Pellitteri, DO, Danville, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss indications and expected outcomes for concurrent chemoradiation therapy and describe expected side effects of the treatment.

OBJECTIVES: Characterize outcome and identify morbidity of patients treated with concurrent chemotherapy and radiation therapy for advanced head and neck squamous cell cancer (HNSCC) in our institution. **STUDY DESIGN:** A retrospective review was performed of patients treated with concurrent chemoradiation for stage III and IV HNSCC between 1995 and 2000 in a single tertiary care facility. **METHODS:** All were treated with concurrent chemotherapy and external beam radiation therapy. The chemotherapy regimen was either cisplatin bolus followed by 5-FU continuous infusion for 96 hours at the beginning of radiation and again after the fourth week of therapy, or weekly low dose cisplatin. **RESULTS:** 57 patients were identified. 2 patients were excluded because of missing information and 2 patients were lost to follow-up. All were treated with cisplatin and 5-FU concurrently with external beam radiotherapy. Mean follow-up was 30 months. The most common toxicities were dysphagia, mucositis and skin reactions. 20 patients (38%) required adjustments in their treatment regimen due to toxicity. There were three treatment-related deaths. 42 patients (79%) had a complete response to therapy. 18 patients underwent neck dissection for a persistent neck mass. 14 (78%) of these had no viable tumor in the surgical specimen. In patients with at least 3 years of follow-up (N=29), the 3 year disease specific survival was 59%. **CONCLUSIONS:** Concurrent chemoradiation therapy has proven to be an effective treatment for advanced HNSCC, although complications from treatment need to be understood. Because of improved overall control of the primary tumor with concurrent chemoradiation, this treatment modality has become the recommended therapy for advanced HNSCC at our institution. Appropriate management of patients with a persistent neck mass after treatment is an issue warranting further investigation.

9:01 The Vascularized Hemi Tracheal Autograft for Laryngotracheal Reconstruction: A New Surgical Technique Based on the Thyroid Gland as a Vascular Carrier

Karen B. Zur, MD+, New York, NY
Mark L. Urken, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand a novel technique for laryngotracheal reconstruction.

OBJECTIVES: The management of extensive laryngotracheal stenosis has been a challenge confronting head and neck surgeons for over a century. The key to the successful restoration of a stable airway is providing a cartilaginous infrastructure to provide support to withstand both the negative and positive luminal pressures produced during normal respiration and deglutition. We introduce a novel technique for restoration of such defects. **STUDY DESIGN:** Case reports. **METHODS:** The blood supply to the thyroid gland via the superior pole and the inferior thyroid artery is identified and preserved. These vessels are mobilized and one-half to two-thirds of the circumference of the adjacent tracheal rings are mobilized and transected, based on the requirements of the stenotic segment. This mucochondrial composite tracheal flap with intact blood supply through the thyroid gland is mobilized and advanced superiorly to the ipsilateral 'laryngeal' region. **RESULTS:** Three case reports are presented. The patients were successfully decannulated postoperatively, have an adequate voice and are tolerating a diet. **CONCLUSIONS:** A new surgical technique for reconstruction of benign laryngotracheal stenosis is introduced to restore phonatory capability, efficient swallowing and decannulation after repair of extensive glottic-subglottic stenoses. The composite thyroid-trachea graft based on the inferior thyroid artery pedicle allows a single-staged, primary reconstruction of the hemilarynx with a viable composite thyrotracheal flap that allows resurfacing as well as replacement of the infrastructure of the glottis and subglottis.

9:08 DISCUSSION

**9:16 Introduction of Keynote Speaker, John B. Chessare, MD, MPH,
Sr. Vice President & Chief Medical Officer, Boston Medical Center**
Kenneth M. Grundfast, MD*, Boston, MA

9:21 KEYNOTE ADDRESS: MINIMIZING MEDICAL MISTAKES
John B. Chessare, MD, MPH, Boston, MA

9:51 Break/Poster Presentations/Visit with Exhibitors -
Georgian/Arlington/Berkeley/Clarendon Rooms

**MODERATORS: MARK S. PERSKY, MD*, NEW YORK, NY, AND
RANDAL S. WEBER, MD*, PHILADELPHIA, PA**

10:16 Subcutaneous Mandibulotomy: A New Approach to the Parapharyngeal Space
Marita T. Stepp, MD+, New York, NY
Daniel Buchbinder, DDS, MD, New York, NY
Eric M. Genden, MD, New York, NY
Rod P. Rezaee, MD, Cleveland, OH

Mark L. Urken, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the traditional approaches to the parapharyngeal space and to understand the method and indications for a new surgical technique, the subcutaneous mandibulotomy.

OBJECTIVES: Surgery for tumors of the parapharyngeal space (PPS) requires adequate exposure to identify and protect vital structures. Transcervical and transparotid approaches to the PPS may be augmented by mandibulotomy. However, midline mandibulotomy generally includes a lip-split incision as well as an extensive intraoral incision, necessitating tracheostomy and nasogastric feeding. We describe a new technique to increase exposure to the PPS while avoiding these consequences. **STUDY DESIGN:** Case series. **METHODS:** Four patients with tumors involving the PPS underwent surgery using a new technique, which involves extending the traditional cervical-parotid incision to the submental area, then creating a subperiosteal tunnel over the anterior aspect of the mandible. A mandibulotomy is performed while leaving the gingiva and floor of mouth mucosa intact. In this series, the additional exposure achieved by this technique was more than adequate to safely remove large PPS tumors which could not be delivered through the initial transcervical-parotid approach. **RESULTS:** All patients did well postoperatively, were started on an oral diet the morning after surgery and discharged within three days. Pathology revealed a venous malformation, a schwannoma, and two benign deep lobe parotid tumors. **CONCLUSIONS:** We describe a new technique, the subcutaneous mandibulotomy, which is recommended for larger lesions and for neural or vascular tumors of the PPS. This technique affords increased surgical access to the PPS without the lip, chin-split, and floor of mouth incisions. Subcutaneous mandibulotomy avoids both nasogastric feeding and a tracheostomy and offers improved cosmesis as compared to full labiomandibulotomy. We describe our current stepwise approach to exposure of the PPS.

10:23 Central and Lateral Neck Dissection in Patients With Well-Differentiated Thyroid Carcinoma

Manish D. Shah, BSc, Toronto, ON Canada
Francis T. Hall, FRACS, Toronto, ON Canada (*Presenter*)
Paul G. Walfish, MD, Toronto, ON Canada
Ian J. Witterick, MD, Toronto, ON Canada
Jeremy L. Freeman, MD, Toronto, ON Canada

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand our approach to the management of clinical nodal involvement of the central and lateral regions of the neck in well-differentiated thyroid carcinoma.

OBJECTIVES: To compare the rate and site of recurrence in patients with well-differentiated thyroid carcinoma who underwent a central neck dissection, a lateral neck dissection, or a combination of both procedures. **STUDY DESIGN:** Retrospective chart review. **METHODS:** The charts of 522 consecutive patients with well-differentiated thyroid carcinoma were reviewed and 93 patients who had undergone a neck dissection were identified. The rates of recurrence in three sites were noted: the central neck nodes (levels VI and VII), lateral neck nodes (levels I-V), and distant sites. These rates were compared in patients who underwent a central neck dissection (level VI and/or VII) and in patients who underwent a lateral neck dissection. **RESULTS:** Twelve patients underwent only a central neck dissection, 52 patients had only a lateral neck dissection, and 29 patients had both a central and a lateral neck dissection. In these three groups there were 0, 2 and 4 central neck node recurrences, 3, 11 and 9 lateral neck recurrences, and 1, 5 and 6 distant recurrences, respectively. There were no significant differences in the rate of recurrence in any of the three sites examined between any of the three treatment groups (Fisher's exact test, all p values > 0.18). **CONCLUSIONS:** In patients with well-differentiated thyroid carcinoma, dissection of only the compartments (central or lateral) of the neck with clinical or radiographic evidence of disease does not result in a higher rate of recurrence at other sites. Therefore, dissection of only the involved compartments followed by radioactive iodine ablation is advocated.

10:30 Cutaneous Squamous Cell Carcinoma Metastatic to the Cervical Lymph Nodes of the Head and Neck

Mark Smith, MB, BS, Westmead, NSW Australia
Carsten E. Palme, FRACS, Westmead, NSW Australia (*Presenter*)
Michael J. Veness, Westmead, NSW Australia
Burcu Cakir, Westmead, NSW Australia
Val Gebiski, Westmead, NSW Australia
Gary Morgan, Westmead, NSW Australia

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate sound understanding of the potential for cutaneous scc of the head and neck to involve cervical lymphatics and discuss the appropriate treatment strategies and outcome after combined modality therapy.

OBJECTIVES: Report outcome of patients treated with combined modality therapy for metastatic cutaneous squamous cell carcinoma (SCC) involving the cervical lymph nodes of the head and neck. **STUDY DESIGN:** Retrospective analysis of patients treated between 1980 and 2000 at a tertiary head and neck oncology treatment centre, Westmead Hospital, Sydney, Australia. **METHODS:** Patients treated with combination surgery and adjuvant radiotherapy for metastatic cutaneous SCC involving only cervical lymphatics were identified from the prospectively maintained head and neck data base. Patients with periparotid node involvement were excluded. **RESULTS:** 52 patients were identified for analysis, 44 males and 8 females. The median age was 65 years (range 37 – 87). The median follow-up was 48 month (range 4 – 127). An index lesion was identified in 44 patients, the lip being most common (24/52). Level 1 (37%) and level 2 (33%) were the most involved cervical levels. Extranodal spread was present in 83% (43/52). Locoregional failure occurred in 19% (10/52). The 5 year overall and disease specific survival rate was 61% and 78% respectively. **CONCLUSIONS:** Metastatic cutaneous scc exclusively involving cervical lymphatics is an uncommon consequence of cutaneous head and neck scc. Good local control and prolonged survival can be achieved with combined modality therapy including neck dissection and adjuvant radiotherapy. Recurrent disease is usually regional and is associated with a poor outcome.

10:37 Identification of Novel Potential Tumor Markers in Head and Neck Squamous Cell Carcinoma by DNA Micro-Array Analysis: A Novel Molecular Approach

Neil E. Brown, MD, Boston, MA
Elizabeth Mulcahy, MD, Boston, MA
Gregory A. Grillone, MD, Boston, MA
Remco A. Spanjaard, PhD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the relevance of DNA microchip technology as it applies to identification of potential new genes that can serve as biomarkers and/or targets for gene therapy in the treatment of head and neck cancer.

OBJECTIVES: Despite advances in the diagnosis and treatment of head and neck squamous cell carcinoma (HNSCC), the morbidity of this disease has not changed. The lack of reliable biomarkers in patients with primary or recurrent disease. Additionally, no biomarkers exist as potential targets of therapy. The purpose of this study was to examine the applicability of DNA microarray technology to identify new prognostic indicators and potential therapeutic targets. **STUDY DESIGN:** Global gene expression analysis of snap-frozen squamous cell carcinoma derived from oral cavity and normal mucosa. **METHODS:** RNA was

extracted from a tumor from a patient with HNSCC and from normal tissue and used for gene expression profiling by DNA microarray. A 2.7-fold difference in expression level was considered significant. A representative selection of genes were analyzed by Northern blot to verify the microarray results. Immunohistochemistry was then performed to determine MMP11 and 12 expression. **RESULTS:** DNA microarray analysis showed increased expression in 89 genes, while 24 genes were down regulated in tumor relative to normal tissue. Northern blot analysis was consistent with the microarray data. 101/115 regulated genes had not been associated with cancer. Potential candidate markers included matrix metalloproteinase (MMP)11 and 12, which were validated using immunohistochemistry. **CONCLUSIONS:** DNA microanalysis is a powerful new tool for identifying potential new biomarkers in HNSCC. Among the 101 candidates identified in this study, expression of MMP11/12 is of significant interest due to the known involvement of MMPs with carcinogenesis. Further study is required to establish whether MMP11/12 will serve as prognostic indicators and potential therapeutic targets in HNSCC.

10:44 DISCUSSION

**MODERATORS: VIJAY K. ANAND, MD*, NEW YORK, NY, AND
BERRYLIN J. FERGUSON, MD*, PITTSBURGH, PA**

10:52 Myospherulosis Following Sinus Surgery—Pathologic Curiosity or Important Clinical Entity?

Raj H. Sindwani, MD, FRCS, Boston, MA
Jacob T. Cohen, MD, Boston, MA
Ben Z. Pilch, MD, Boston, MA
Ralph B. Metson, MD*, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate an understanding of myospherulosis, including its impact on healing following sinus surgery, and recognize the characteristic histologic findings in this process.

OBJECTIVES: To determine whether myospherulosis, a foreign body reaction to lipid-based ointments used on nasal packing, results in clinically relevant adhesions after sinus surgery. **STUDY DESIGN:** Retrospective case-control study. **METHODS:** Thirty-two surgical specimens with myospherulosis were identified in 28 patients (four with bilateral disease) who underwent sinus surgery at an academic medical center over a 10 year period (1989 to 1999). A control group consisted of 28 randomly selected patients who underwent revision sinonasal surgery at the same institution during the same time period. **RESULTS:** Adhesions were found at the time of surgery in a significantly higher number of patients with myospherulosis than controls (50% vs. 18%, $p=0.023$). Histologic staging based on the extent of lipid vacuoles and spherules (red blood cell remnants) present in the surgical specimen correlated with clinical disease severity based on preoperative sinus CT stage ($p=0.009$). Patients with myospherulosis tended to have a shorter interval between their last two surgeries than did the control group (2.2 ± 2.1 vs. 4.5 ± 7.1 years, $p=0.086$). Mean follow up from time of initial surgery was 13.2 years (range 5.6 to 30.6 years). Patient age, sex, previous operations, CT stage, and comorbidities were not predictive for the occurrence of myospherulosis. **CONCLUSIONS:** Patients who develop myospherulosis from lipid-based packing material used during sinus surgery are more likely to develop postoperative adhesions. These adhesions appear to be clinically relevant and may hasten the need for revision surgery.

10:59 Efficacy of Endoscopic Sinus Surgery (ESS) With and Without Adjuvant Perioperative Intravenous Antibiotic Therapy (IVA) in Patients With Chronic Refractory Sinusitis (CRS)—A Pilot Study

Vijay K. Anand, MD, FACS*, New York, NY
Ashutosh Kacker, MD, New York, NY
Howard L. Levine, MD*, Cleveland, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to select patients who will benefit from a combined ESS and IVA treatment protocol.

OBJECTIVES: Hypothesis: Chronic refractory sinusitis (CRS) may represent chronic osteitis of the sinus bony walls and may respond better to a combination of endoscopic sinus surgery (ESS) and perioperative IV antibiotics (IVA) than ESS alone. **STUDY DESIGN:** A multi-center case control study based in two tertiary care teaching hospitals. **METHODS:** 50 patients (25 in each group) were reviewed. In one center, 25 patients were treated with ESS+IVA and the other center patients were treated with ESS alone. The patients were matched for severity of disease and comorbid conditions. All patients underwent an endoscopic examination, staging of sinusitis on CT scan using the Lund-Mckay staging system, symptom based scale and a quality of life evaluation using the respiratory dysfunction index at the start of the study and then weekly for 12 weeks and then at 1 year. The ESS+IVA group received two weeks of preoperative IV antibiotics followed by surgery and then 6 more weeks of IV antibiotic treatment. The antibiotics were selected based on cultures results obtained by directed sinus aspiration/lavage. **RESULTS:** Both groups had a good response in all the categories reviewed. The ESS+IVA group showed fewer relapses in symptoms. **CONCLUSIONS:** ESS+IVA provides a longer symptom free period than ESS alone in patients who suffer with CRS. A larger randomized case controlled study is required to confirm the findings of this pilot study.

11:06 Geriatric Sinus Surgery

David R. Edelstein, MD*, New York, NY
Alexis H. Jackman, MD, New York, NY (Presenter)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) discuss the unique challenges of treating geriatric patients with sinusitis, 2) compare the outcomes of sinus surgery in the adult versus geriatric age groups, and 3) explain the differences and similarities in the preoperative and postoperative care of these two age groups.

OBJECTIVES: To study the indications, surgical techniques, complications and postoperative care of patients in the adult versus geriatric age group undergoing maxillary and ethmoid sinus surgery. **STUDY DESIGN:** Clinical, retrospective, review. **METHODS:** 655 consecutive adult patients, who underwent maxillary and/or ethmoid sinus surgery over the last 12 years, were studied retrospectively. 77 patients (12%) of these surgical patients were over the age of 65. A review of preoperative assessment, clinical indicators and CT Scans were compared with the adult versus geriatric groups. Surgical care, complications and postoperative care were analyzed. **RESULTS:** Geriatric patients underwent similar preoperative and intraoperative care versus the adult group. There was no difference in minor complications and no major complications in either group. Differences in treatment were identified in the postoperative care. **CONCLUSIONS:** Geriatric patients can undergo endoscopic sinus surgery with excellent results and minimal problems. Additional preoperative medical assessments are usually necessary along with more rigorous postoperative nasal cleaning and care. Surgeons should consider their biases regarding the care of the elderly and appreciate the differences in the aging nose.

11:13 DISCUSSION

MODERATORS: VIJAY K. ANAND, MD*, NEW YORK, NY, AND

11:18 Intraoperative MRI and Navigation for Complex Sinonasal Disease

Soly Baredes, MD*, Newark, NJ
Michael Schulder, MD, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the utility of intraoperative MRI, and navigation using updated intraoperative images in sinonasal surgery.

OBJECTIVES: We report our experience with endoscopic and microscopic surgery for inflammatory sinonasal disease in 3 patients using an intraoperative MRI unit. **STUDY DESIGN:** Report of 3 cases and literature review. **METHODS:** Intraoperative MRI was used in 2 cases of allergic fungal sinusitis with intracranial extension and a case of a large frontoethmoidal mucocele with intracranial and intraorbital extension. The MRI unit used (Polstar N-10) is designed to work in a regular operating room environment and to provide navigation based on updated images obtained intraoperatively. **RESULTS:** The use of intraoperative MRI helped to monitor the progress of surgery in all cases and to confirm that the goals of surgery were accomplished. In one case, the planned surgical procedure was altered because of the intraoperative images. Updated imaging enhanced the utility of intraoperative navigation. **CONCLUSIONS:** The use of an intraoperative MRI unit can be useful in the management of selected patients with inflammatory sinonasal disease.

11:25 Effectiveness of Combination Endoscopic Nasal and Anterior Craniotomy Approach for Esthesioneuroblastoma Resection

Anand K. Devaiah, MD, Boston, MA
Douglas A. Girod, MD, Kansas City, KS
Larry A. Hoover, MD*, Kansas City, KS

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the effectiveness of complete endoscopic nasal and anterior craniotomy surgical resection in the treatment of esthesioneuroblastoma.

OBJECTIVES: The treatment of esthesioneuroblastoma using endoscopic techniques is an evolving surgical modality being employed at different medical centers. We advocate endoscopic nasal tumor excision with anterior craniotomy for concomitant cribriform plate removal. **STUDY DESIGN:** We conducted a retrospective chart review of esthesioneuroblastoma patients treated at our tertiary care institution from 1991-2000. **METHODS:** Patients were excluded for non-surgical treatment or tumor excision at another institution. Several measures including patient demographics, tumor histology, presenting signs/symptoms, staging (Kadish and Dulguerov), post-op complications, adjunct therapy, and recurrence were examined. **RESULTS:** There were 7 patients who met all inclusion criteria. The average age was 47 years, with a 4:3 male:female distribution. Patients were grouped by staging of tumors using Kadish (stages A, B, and C totaled 3, 1, and 3 patients respectively) and Dulguerov (stages T1, T2, and T4 totaled 3, 2, and 2 patients respectively) methods. Average follow-up was 58.6 months. All patients had an endoscopic nasal approach (one patient also had partial facial degloving) with anterior craniotomy. The most common post-operative complication was mental status change, which was seen in two patients. There were no post-operative mortalities. All patients received post-operative radiation therapy, and one also received chemotherapy. At last follow-up, six patients had no evidence of disease, and one is alive with disease. Two of the seven patients had recurrences. Neither Hyams grading nor en bloc versus piecemeal resection appeared to influence outcome. **CONCLUSIONS:** We conclude that this surgical approach is effective in the treatment of esthesioneuroblastoma.

11:32 Clinical Outcomes of Septoplasty in the Geriatric Population

Nicolas Y. Busaba, MD, Boston, MA
Monir M. Hussain, MS, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the clinical benefits of septoplasty in patients whose age is 65 years or more.

OBJECTIVES: Assess the clinical outcomes of septoplasty in patients whose age is 65 years or more. **STUDY DESIGN:** Prospective study. **METHODS:** Patients who were 65 or more years old and undergoing septoplasty with or without turbinate reduction were asked to fill both chronic sinusitis survey (CSS) and SF-12 questionnaire before the surgery and 6 months after it. Patients with previous nasal surgery or nasal trauma within the previous 5 years were excluded. Statistical analysis of the difference between the pre- and post-operative scores was done using the paired-t-test. **RESULTS:** 55 patients were enrolled in the study. However, pre- and post-operative data were available on 40 patients and those comprised our study group. There were 36 males and 4 females with an age range of 65 to 82 years. Thirty-eight patients had inferior turbinate reduction in addition to the septoplasty. The CSS score for the group improved significantly following the surgery. The pre-operative CSS score was 52.3, while the post-operative score was 76.6 ($p < 0.001$). The reported benefit reflected improvement in symptoms ($p < 0.001$) and reduction in medication usage ($p < 0.001$). In addition, the SF-12 score improved after the surgery but the difference did not reach statistical significance ($p = 0.055$). **CONCLUSIONS:** Septoplasty improved the CSS and SF-12 scores in patients 65 years of age and older. The surgery is beneficial in this age group for individuals who present with nasal obstruction due to nasal septal deviation.

11:39 DISCUSSION

11:44 SYMPOSIUM: MASTERS IN OTOLARYNGOLOGY/SESSION I

MODERATOR: Jonas T. Johnson, MD*, Pittsburgh, PA

PANELISTS: Mack L. Cheney, MD, Boston, MA - Facial Plastic Surgery
Patrick J. Gullane, MD*, Toronto, Canada - Head & Neck
Simon C. Parisier, MD*, New York, NY - Otolaryngology
Mark L. Urken, MD, New York, NY - Reconstructive Surgery

12:34 Lunch - Stanbro

MODERATORS: STEVEN D. SCHAEFER, MD*, NEW YORK, NY, AND
STEVEN M. ZEITELS, MD*, BOSTON, MA

1:34 1ST PRIZE - RESIDENT RESEARCH AWARD

Diagnosing Laryngopharyngeal Reflux With Flexible Laryngoscopy Following Administration of Methylene Blue Capsules: A Comparison With Ambulatory 24-Hour pH Monitoring

Kristen S. Fahrner, MD+, Burlington, VT
Robert A. Sofferan, MD*, Burlington, VT
William J. Brundage, MD, Burlington, VT

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the current difficulties in diagnosing laryngopharyngeal reflux and be able to explain the utility of ambulatory 24-hour pH monitoring.

OBJECTIVES: The purpose of this study is to determine if examination of the larynx following administration of methylene blue gelatin capsules will be an effective method to evaluate laryngopharyngeal reflux (LPR), as compared to ambulatory 24-hour pH monitoring. **STUDY DESIGN:** Prospective, nonrandomized. **METHODS:** Thirty-four patients with symptoms suggestive of LPR, and four healthy volunteers underwent a complete head and neck examination followed by dual site ambulatory 24-hour pH monitoring. The evening of the probe study, a gelatin capsule containing methylene blue was given at bedtime. The following day, the larynx, pharynx, and pH probe were examined for the presence of blue stain, and termination of the study. **RESULTS:** LPR was documented in 21 patients and 1 control, as determined by the pH probe. Despite the degree of nocturnal reflux, no patient in this study had the presence of blue stain in the pharynx or larynx. Staining of the probe occurred in 14 patients and 0 controls. The length of stain correlated significantly in patients with dysphagia ($p=0.017$), arytenoid erythema ($p=0.022$), pseudo sulcus vocalis ($p=0.045$) and both LPR and GERD documented on the pH probe ($p=0.004$). **CONCLUSIONS:** Delivery of methylene blue via a gelatin capsule does not stain the larynx or pharynx despite significant nocturnal reflux. Ambulatory 24-hour pH monitoring remains the gold standard test for the diagnosis of LPR. Further investigation into the use of methylene blue, however, may lead to a simple, minimally invasive test which could offer otolaryngologists a first line diagnostic tool for the evaluation of LPR.

1:41 Micronized Dermis Injection Laryngoplasty: Follow-up Study of 80 Patients

Peak Woo, MD*, New York, NY
Linda M. Carroll, PhD, New York, NY
Jackie Mojica, MS, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, participants should be able to discuss the benefits of micronized dermis for management of inadequate glottic closure due to paralysis, bowing or surgical defects, and the necessary precautions in optimum patient selection for operative laryngoscopy and office-based injection laryngoplasty.

OBJECTIVES: Micronized dermis (Alloderm) has been used as an alternative to fat, Teflon and collagen for vocal fold augmentation in patients with vocal fold paralysis (VCP), bowing and surgical defects. We report a follow-up study of 80 of 93 patients injected by 97 injections. The indications were: unilateral paralysis ($n=47$), scar with posttraumatic defects ($n=21$), and senile bowing ($n=11$). Seventy-three had operative laryngoscopy and 24 had office based injection laryngoplasty by trans-cervical approach. Clinical voice and swallow performance and video-stroboscopy were used to evaluate the long-term effects. The Mean follow-up was 17+/- 9 months. **STUDY DESIGN:** Retrospective chart review and clinical assessment. **METHODS:** Tertiary academic outpatient setting. **RESULTS:** 27/80 patients had excellent results with a single injection lasting greater than one year. Improved voice was noted in 36/80 with a single injection but results were variable in the scarred group. Seventeen patients needed additional treatments due to absorption ($n=7$), defect size ($n=4$), and arytenoid rotation ($n=6$). One instance of unexplained vocal fold edema developed post injection. **CONCLUSIONS:** Micronized dermis is a safe implant for vocal fold augmentation by office or operative injection. Variable absorption in the first six months may result in sub-optimal results. Careful selection of patients is warranted.

1:48 Combined Laryngotracheal Separation and Esophageal Injury Following Blunt Neck Trauma

Richard A. Bernat, MD, Philadelphia, PA
Jeffrey M. Zimmerman, MD, Philadelphia, PA
Edmund D.A. Pribitkin, MD, Philadelphia, PA
William M. Keane, MD*, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to identify the relevant clinical signs and symptoms of laryngotracheal separation and esophageal injury, explain why this injury is extremely rare secondary to the anatomic area, compare this case with the prior five reported cases, and discuss diagnosis, airway management, and surgical repair.

OBJECTIVES: Laryngotracheal separation secondary to blunt neck trauma is a rare laryngeal injury with only five previously cited cases. Combined laryngotracheal separation and pharyngoesophageal injury has not been previously reported and presents special reconstructive challenges. All of these injuries are of "clothes-line" type mechanism in which a rider falls victim to a horizontal rope or cable. The following case report presents such a combined injury followed by a discussion of the relevant signs, symptoms, anatomic considerations, timely diagnosis, airway management, surgical repair, and comparisons to the prior reported cases. **STUDY DESIGN:** Case report of one patient with combined laryngotracheal separation and esophageal injury who underwent successful surgical repair, and comparison to the previously cited cases. **METHODS:** Chart review and literature search with review of the five previously cited cases. One patient case report who underwent repair of laryngotracheal separation with esophageal injury and laryngeal core mold stenting with no postoperative complications. **RESULTS:** Follow up of the postoperative patient, including removal of laryngeal stent, voice quality, swallowing function and tracheal decannulation. **CONCLUSIONS:** Combined laryngotracheal separation with esophageal injury is a very rare event that presents special diagnostic, airway management, and reconstructive challenges.

1:55 Practice Patterns in the Use of Voice Rest for Medical Diagnoses and Following Surgical Procedures

Timothy D. Anderson, MD, Burlington, MA
Robert T. Sataloff, MD*, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to define current practice patterns in the use of voice rest in laryngology.

OBJECTIVES: The practice of placing patients on voice rest following laryngeal surgery is widespread, yet little to no research supporting the use of voice rest exists in the literature. This study is intended to examine the prevalence of the use of voice rest for selected medical diagnoses and surgical procedures. **STUDY DESIGN:** Structured and open-ended survey of otolaryngologists, speech language pathologists and other voice care professionals using relevant mailing lists. **METHODS:** Participants were asked to indicate how long they would recommend absolute and relative voice rest for a variety of surgical and medical diagnoses. The participants guidelines for relative voice rest were also elicited. Surgical diagnoses included medialization (laryngeal framework surgery or injections) and lesion removal (vibratory margin lesions, papillomatosis). Medical diagnoses included vocal fold hemorrhage, mucosal tears, nodules and acute laryngitis. **RESULTS:** 744 surveys were mailed and 141 responses (19%) were received. Recommended lengths of voice rest varied widely for all diagnoses. Relative voice rest was defined as decreased vocal volume by 39% of respondents, decreased time of vocal use by 32% and by both of these criteria by 29%. **CONCLUSIONS:** Practice patterns in the use of both absolute and relative voice rest vary widely. No consensus exists on how long to use voice rest, how to define "relative" voice rest, or even whether to use voice rest.

2:02 DISCUSSION

**MODERATORS: SAMUEL H. SELESNICK, MD*, NEW YORK, NY AND
DUDLEY J. WEIDER, MD*, LEBANON, NH**

2:10 Endoscopic Management of Limited Attic Cholesteatoma

Muaaz Tarabichi, MD, Dubai, UAE

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) understand the rationale for using endoscopic technique in cholesteatoma surgery, 2) understand the basic surgical technique, and 3) evaluate the long term results of endoscopic management of attic cholesteatoma.

OBJECTIVES: Microscopic postauricular tympanomastoidectomy provides a limited exposure to the attic, especially anteriorly. In contrast, the endoscope offers wide transcanal access to the attic, allowing for complete removal of limited attic disease, possibly without interrupting the ossicular chain. This report evaluates 8 years experience with transcanal endoscopic management of limited attic cholesteatoma. **STUDY DESIGN:** Case series. **METHODS:** 73 ears with limited attic cholesteatoma underwent endoscopic transcanal tympanotomy and extended atticotomy to access and completely remove the sac. Disease was dissected off the tegmen, medial and lateral attic walls, as well as the ossicles. Appropriate ossicular reconstruction was performed. The defect was reconstructed with composite tragal graft. **RESULTS:** Transcanal endoscopic approach was adequate for removal of disease in all cases. There were no iatrogenic facial nerve injuries. Bone thresholds were stable. Disease was dissected off the head of malleus and the body of incus with preservation of both in 24 ears. Mean follow-up was 43 months. Five ears required revision for recurrent disease, and 8 were revised for failed ossicular reconstruction or persistent perforation. Moderate to severe retraction in other areas of the tympanic membrane were evident in 28 cases, none of these required further intervention. **CONCLUSIONS:** Endoscopic technique allows transcanal, minimally invasive, eradication of limited attic cholesteatoma. Preservation of the ossicles coupled with complete removal of disease is more likely with the endoscope.

2:17 Prevention and Management of CSF Leak Following Acoustic Neuroma Surgery

Andrew J. Fishman, MD, New York, NY
Michelle S. Marrinan, MD, New York, NY (*Presenter*)
J. Thomas Roland, MD, New York, NY
John G. Golfinos, MD, New York, NY
Noel L. Cohen, MD*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the prevention and management of CSF leaks following acoustic neuroma surgery.

OBJECTIVES: Postoperative CSF leak is reported in 2-30% of cases following acoustic neuroma surgery. Our current surgical techniques for translabyrinthine (TL), retrosigmoid transmeatal (RST) and middle cranial fossa (MCF) have evolved from analysis of our prior experience in an effort to minimize our complication rate. We evaluated the efficacy of our current surgical technique in decreasing the incidence of postoperative CSF leak rate. **STUDY DESIGN:** Retrospective review. **METHODS:** The acoustic neuroma database from the NYU Medical Center Neurootological service was reviewed. Data as extracted for type of approach, age, sex, tumor size and CSF leak rate. Surgical techniques and wound leak management was reviewed. **RESULTS:** Data from 230 recently operated patients from 1995 to 2000 manifested a 6.5% CSF leak for primary surgeries. This compares favorably to our 18% overall CSF leak rate in 555 total primary surgeries performed between 1979-1995. TL closure is performed with a fascial sling and abdominal fat graft in conjunction with middle ear, aditus and mastoid obliteration. Attention must be paid to soft tissue obliteration of potentially open air cell tracts. RST closure is performed with a soft tissue graft in the internal auditory canal (IAC) drill-out held in position by a saloon door dural flap in conjunction with abdominal fat obliteration of the mastoidectomy cavity. Watertight dural closure is achieved with a sutured temporalis fascia graft. MCF closure is performed with attention to potential air cell tracts of the IAC drill-out as well as abdominal fat graft and tissue glue. **CONCLUSIONS:** Evolution in surgical techniques with particular attention to involved air cell tracts, abdominal fat graft and Palva periosteal flap for closure have had a significant effect in decreasing our CSF leak rate after acoustic neuroma surgery.

2:24 Hydroxyapatite Cement in Temporal Bone Surgery: A 10 Year Experience

John F. Kveton, MD, New Haven, CT
Daniel H. Coelho, MD, New Haven, CT (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should understand the indications and benefits of using hydroxyapatite cement in temporal bone surgery.

OBJECTIVES: To describe the indications for successful use of hydroxyapatite cement in temporal bone surgery. **STUDY DESIGN:** Retrospective case review. **METHODS:** 102 adults and children who presented with temporal bone defects related to surgical approaches to the skull base, infection, neoplasms, or congenital defects were corrected using hydroxyapatite cement over a ten year period. The results and complications were obtained through retrospective chart review. **RESULTS:** All temporal bone defects were successfully repaired using hydroxyapatite cement, and the reconstruction remained stable over the course of this study. There were no cases of postoperative cerebrospinal fluid leak. Wound infection occurred in one patient, requiring re-operation and partial removal of the biomaterial. **CONCLUSIONS:** Hydroxyapatite cement is a biomaterial that should be used as the primary method to reconstruct temporal bone defects. Proper use of this biomaterial results in restoration of the integrity of the temporal bone and elimination of cerebrospinal fluid leak as a postoperative complication.

2:31 The Incudostapedial Joint Angle: Implications for Stapes Surgery Prosthesis Selection and Crimping

Margaret Skinner, MD, Charleston, SC
Carlo P. Honrado, MD, New York, NY (*Presenter*)
Mukesh Prasad, MD, New York, NY
Nelson Kent, BS, New York, NY
Samuel Selesnick, MD*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the role of the incudostapedial joint (ISJ) angle in stapes prosthesis size selection and crimping.

OBJECTIVES: To evaluate the role of the incudostapedial joint (ISJ) angle in stapes prosthesis size selection and crimping. **STUDY DESIGN:** The ISJ of 13 cadaveric human temporal bones were dissected, photographed and measured using computer aided design software. A meta-analysis was also performed evaluating factors contributing to stapedectomy failure. **METHODS:** A transmastoid extended facial recess approach was used to visualize the ossicular chain. A pho-

tograph of the incudostapedial unit coaxial with the plane of the oval window was obtained using a Zeiss OPMI PRO-magis microscope. The relationship of ISJ angle to prosthesis length was also modeled. **RESULTS:** The mean ISJ angle was 93.0+/-8.3 degrees (75.0-104.0). The mean ISJ angle deviation from 90 degrees was 7.35+/-4.45 degrees (0.3-15.0 degrees). The mean distance along the incus accessible for prosthesis placement was 3.21+/-0.55mm (2.00-4.00). **CONCLUSIONS:** Significant deviation of the ISJ angle from 90 degrees was found ($p<0.0001$). The length along the incus accessible for prosthesis placement was sufficient to result in errors in prosthesis size selection and crimping with only small variations in the ISJ angle. Incorrect prosthesis sizing and crimping are frequently associated with stapedectomy failure. Therefore, variations in ISJ anatomy should be considered when selecting stapes prostheses lengths and may affect crimping technique.

2:38 DISCUSSION

**MODERATORS: SAMUEL H. SELESNICK, MD*, NEW YORK, NY, AND
DUDLEY J. WEIDER, MD*, LEBANON, NH**

2:46 **Contralateral Suppression of Distortion-Product Otoacoustic Emissions Declines With Age: A Comparison of Findings in Human Listeners and CBA Mice**

Michael J. Jacobson, MD+, Rochester, NY
SungHee Kim, MD, Rochester, NY
Xiao-Xia Zhu, MD, Rochester, NY
Josh Romney, MS IV, Rochester, NY
Robert D. Frisina, PhD, Rochester, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the role of the efferent-MOC system in modulating cochlear output, understand that this system degrades with normal aging, and compare similar age-related findings in humans and CBA mice.

OBJECTIVES: The auditory efferent system plays a presumed role in enhancing signals in noise, optimally maintains the cochlea for acoustic signal processing, and may have a protective role in preserving auditory function. The objective of this study is to measure age-related changes of the Medial-Olivo-Cochlear (MOC) efferent system in humans and CBA mice by comparing DPOAE's generated with and without contralateral white noise stimulation. OAE's were typically reduced in magnitude when white noise was presented to the contralateral ear. This contralateral suppression (CS) is attributed to activation of the MOC efferent, which has an inhibitory effect on the outer hair cell system. By studying CS on cochlear output in human and mouse subjects of different ages, it is possible to describe aging effects on the MOC. **STUDY DESIGN:** Co terminus studies—Human subjects were young adult, middle-aged, and old (N=10/group). CBA mice were divided into groups of young, middle-aged, and old animals (8,6,14 animals/group respectively). **METHODS:** 2f1-f2 DPOAE-grams were recorded for individual subjects in each group under two conditions: 1) quiet conditions, and 2) a contralaterally applied wide-band noise. **RESULTS:** Principle findings were that DPOAE levels decreased with age for humans and mice, and that CS declined in middle-aged and old-aged groups relative to the young adults, for both humans and mice. **CONCLUSIONS:** Functional decline of the MOC-efferent system with age precedes OHC degeneration. Loss of MOC suppressive function may play an important role in the development of presbycusis in both humans and mice.

2:53 **Which Comes First?—Psychogenic Dizziness Versus Otogenic Anxiety**

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

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the role that physical neurotologic illnesses play in the development of psychogenic dizziness.

OBJECTIVES: To investigate the hypotheses that 1) physical neurotologic conditions may trigger psychogenic dizziness, and 2) risk factors for psychogenic dizziness may be identified. **STUDY DESIGN:** Retrospective review of all patients (N=132) treated at a tertiary care, balance center from 1998—2002 for psychogenic dizziness with or without physical neurotologic illnesses. **METHODS:** All patients underwent comprehensive neurotologic and psychiatric evaluations with attention to the longitudinal course of symptoms and risk factors for psychopathology. For data analysis, patients were grouped according to the condition first causing dizziness. Risk factors were compared across groups. **RESULTS:** Three equally prevalent patterns of illness were found: 1) anxiety disorders as the sole cause of dizziness (33% of cases), 2) neurotologic conditions exacerbating pre-existing psychiatric disorders (34%), and 3) neurotologic conditions triggering anxiety or depressive disorders (33%). Panic disorder and agoraphobia were significantly more prevalent than less severe phobias in the first two groups, whereas the opposite pattern existed in the third group ($p<0.05$). A higher proportion of patients in the first two groups also had risk factors for developing anxiety disorders ($p<0.05$). Depression was not a primary cause of dizziness in any patient. Vestibular neuronitis, benign paroxysmal positional vertigo, and migraine were the most common neurotologic conditions. **CONCLUSIONS:** These data support the hypothesis that physical neurotologic conditions may trigger psychopathology. Two specific patterns were identified. Neurotologic conditions may precipitate new psychiatric disorders or worsen the course of pre-existing psychiatric illnesses. In addition, primary anxiety disorders alone may cause dizziness. Risk factors for anxiety disorders were associated with more severe psychopathology.

3:00 **Threaded Myringotomy Tubing Facilitating Stable Placement and Adjustable Duration of Intubation**

Michael S. Morris, MD, Rockville, MD

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to compare how modification of a myringotomy tube's external surface results in favorable alteration of how it interacts with tympanic membrane epithelial migration.

OBJECTIVES: Tympanostomy tube placement is often indicated in the treatment of recurrent or refractory otitis media. Current tube designs vary in length and composition but all share a smooth cylindrical surface between inner and outer flanges. The cylindrical tube surface interacts with the tympanic membrane in an unpredictable fashion. Cylindrical tubes migrate and may extrude prematurely or stay in too long. Tympanic membrane perforation may occur. Epithelial flow across the TM affects cylindrical tubing position and results in these variable extrusion rates. Practitioners must choose between tubes that remain in place for 10-14 months or several years, with limited options for short duration placement without surgical removal. Moreover, tubes cannot be selected to appropriately match intubation duration and highly variable clinical indications. A threaded myringotomy tube was developed to address current tympanostomy tube shortcomings. Threaded tubing was found to interact predictably with epithelial migration. The TM, taking advantage of the natural epithelial migratory pattern remain stationary and extrude at a predictable rate. Duration of tube placement can be individually varied to suit treatment goals as a function of threading flange design. Otitis media treatment cost reductions are expected with tubes better matched to clinical indications. **STUDY DESIGN:** Chinchillas were chosen because they have tympanic membranes that are easily intubated. Teflon blocks were machined to make both cylindrical and threaded tubes. Each tube measured 3mm in length and 3.5mm in width. Tubes were calibrated on one end allowing for rotation observation. Following intubation, tube position was checked by weekly photographs. **METHODS:** Four juvenile chinchillas (2 male, 2 female) were anesthetized using standard techniques. Each chinchilla had bilateral myringotomies with placement of a threaded tube on one side and cylindrical tube on the other. The chinchillas were anesthetized

every 7 days for 16 weeks having each ear photographed. Tubes were observed until extrusion began. Photographs were taken with a 0 degree rigid endoscope adapted to a Nikon N90S databack camera. Photographs were compared. **RESULTS:** Threaded Teflon tubing tended to stay in the location of original myringotomy. Cylindrical tubes migrated. Threaded tubing was observed to rotate in a more fixed position by unscrewing. Cylindrical tubes canted in different directions while extruding. **CONCLUSIONS:** Compared to cylindrical tubes, threaded tympanostomy tubes appear to remain in a more stable tympanic membrane position by unscrewing in response to epithelial migration. This characteristic could provide a more precise application in otitis media management. Patient management cost savings would be achieved by reducing the management of early or late tube extrusion.

3:07 DISCUSSION

**MODERATORS: SAMUEL H. SELESNICK, MD*, NEW YORK, NY, AND
DUDLEY J. WEIDER, MD*, LEBANON, NH**

3:12 The Effect of Bilateral Cochlear Implants on Speech Understanding in Noise

Michael N. Waltzman, MD, PhD+, New York, NY
Noel L. Cohen, MD*, New York, NY
William H. Shapiro, MA, New York, NY
J. Thomas Roland, MD, New York, NY
Andrew J. Fishman, MD, New York, NY
Susan B. Waltzman, PhD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to appreciate the benefits of bilateral versus unilateral cochlear implantation, particularly in a noisy environment.

OBJECTIVES: The purpose of this study was to examine the effect of bilateral cochlear implantation on speech understanding in noise. **STUDY DESIGN:** Retrospective analysis of the performance of eight bilateral cochlear implant patients was undertaken. **METHODS:** Eight adult patients with severe-to-profound hearing loss who received bilateral cochlear implants were subjects for this study. Seven subjects received Nucleus 24 contour cochlear implants simultaneously and one subject had sequential implantations. The study was designed to test each implanted ear individually and in concert to determine the effects of binaural stimulation. Monosyllabic word and sentence recognition scores presented in quiet and noise conditions were used as outcome measures to evaluate the subject's ability to understand speech in the various conditions. **RESULTS:** Post-implantation all subjects demonstrated improved speech understanding using the implants in unilateral conditions. Although bilateral stimulation did not always improve speech understanding in quiet scores over individual ear scores, improvement was seen in the noise condition when both implants were used simultaneously. The head shadow effect was the single most important factor. Depending on the direction from which the noise was emanating, the ear with the best signal-to-noise ratio showed the most improvement in speech perception which led to the binaural advantage. **CONCLUSIONS:** Bilateral cochlear implantation can provide increased speech understanding in noise. Research is continuing into the variables which contribute to improved performance with two cochlear implants.

3:19 Intratympanic Steroids: Do They Acutely Improve Hearing in Cochlear Hydrops?

Todd A. Hillman, MD, Pittsburgh, PA
Moises A. Arriaga, MD, Pittsburgh, PA
Douglas A. Chen, MD, Pittsburgh, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to know the theoretical role of intratympanic steroids in the treatment of Meniere's and cochlear hydrops. Understand the effect that intratympanic steroids have acutely on hearing in patients with cochlear hydrops.

OBJECTIVES: To study the acute effects on hearing of intratympanic dexamethasone in patients with cochlear hydrops. **STUDY DESIGN:** Retrospective review. **METHODS:** Patients who met established criteria for the diagnosis of Meniere's disease or had a history of fluctuating hearing loss and met hearing loss criteria for Meniere's indicating cochlear hydrops, underwent a series of 1-3 intratympanic injections of dexamethasone in the affected ear. Follow up audiograms were obtained one week after each injection and in many patients several months after injection. **RESULTS:** Fifty patients met inclusion criteria and were studied. Using the American Academy of Otolaryngology-Head and Neck Surgery reporting guidelines, hearing improved acutely in 20/50 (40%), was worse in 2/50 (4%), and did not change in 28/50 (56%). For those who improved, the average decrease in threshold was 14.2 dB. Longer term audiometric follow up revealed that hearing improved in 12/20 (60%), was worse in 2/20 (10%), and was unchanged in 6/20 (30%). Whether the patient had typical Meniere's or cochlear hydrops did not affect the response to therapy. There were no significant complications from the injections. **CONCLUSIONS:** Intratympanic administration of dexamethasone may acutely affect sensorineural hearing loss associated with endolymphatic hydrops. A prospective, controlled study is required.

3:26 Otitis Media in Young Children With Cochlear Implants

Jose N. Fayad, MD, New York, NY
Abtin Tabaei, MD, New York, NY
Jennifer N. Micheletto, New York, NY
Simon C. Parisier, MD*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the prevalence of otitis media in young children with cochlear implants. Participants should be able to discuss treatment options before and after implantation.

OBJECTIVES: Young children receiving cochlear implants (CI) are potentially at risk for middle ear infections due to the high incidence of acute otitis media (AOM) in this age. The aim of this study is to study the incidence of AOM, and evaluate treatment modalities, in young children who received a CI before the age of 4. **STUDY DESIGN:** Retrospective case review study. **METHODS:** Charts of 108 children who received a CI before the age of 4 were reviewed. Data regarding the prevalence of AOM before implantation, response to antibiotic treatment, and use of ventilation tubes were obtained. **RESULTS:** Seventy two children (66,66%) had a history of acute otitis media before implantation. Twenty four children (22,22%) had ventilation tubes placed before, during or after implant surgery. All episodes of post-implant AOM were successfully treated with oral antibiotics and no infection complications occurred. **CONCLUSIONS:** Treatment of recurrent AOM in young children should not inordinately delay cochlear implant surgery. We propose an algorithm for the management of acute middle ear disease in a cochlear implant candidate and patient.

3:33 DISCUSSION

3:38 Break/Poster Presentations/Visit with Exhibitors -

Georgian/Arlington/Berkeley/Clarendon Rooms

**MODERATORS: WILLIAM M. KEANE, MD*, PHILADELPHIA, PA, AND
CLARENCE T. SASAKI, MD*, NEW HAVEN, CT**

**4:03 2ND PRIZE - RESIDENT RESEARCH AWARD
Micro Venous Anastomotic Thrombosis: The Rat Femoral Vein Tuck Model**
Laxmeesh M. Nayak, MD+, Boston, MA
Daniel Deschler, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, participants should be able to identify features desirable in a model of micro venous thrombosis, describe the rat femoral vein tuck model, and understand its potential in the study of micro venous thrombosis.

OBJECTIVES: While experienced microvascular surgeons perform free tissue transfers in head and neck reconstruction with success rates in excess of 95%, thrombosis of the venous pedicle with subsequent flap failure still causes significant morbidity. Testing interventions designed to minimize the rate of microvenous thrombosis requires an appropriate animal model that not only incorporates the physical characteristics of a clinical anastomosis but also is moderately thrombogenic and practical to prepare in large sample sizes. This study aims to create such a model. **STUDY DESIGN:** Based on an earlier model in the rabbit femoral artery, a rat femoral vein thrombosis model was developed in an approved animal research facility. **METHODS:** Sixty femoral veins (from thirty Sprague-Dawley rats weighing 276-300g) were prepared using standard microvascular techniques to occlude blood flow, create a 180-degree partial transection of each vein, and immediately repair it in such a way that a full thickness flap of vessel wall was "tucked" into the vessel lumen, partially occluding it. Flow was restored, and vessel patency was then assessed in predetermined intervals over a 3-hour period. **RESULTS:** Immediate patency was seen in all vessels. Eighteen of the sixty vessels (30%) clotted within the first hour; the rest remained patent for the entire observation period. **CONCLUSIONS:** The results of this study suggest that the rat femoral vein tuck model can provide a moderately thrombogenic, easily prepared, clinically relevant model of micro venous anastomotic thrombosis. Further studies will utilize this model to investigate the efficacy of specific antithrombotic agents in preventing venous thrombosis.

4:10 Posterior Pharyngeal Wall Augmentation Using Implantable Alloderm® for Treatment of Velopharyngeal Insufficiency (VPI)
Gregory A. Grillone, MD, Boston, MA
Neil E. Brown, MD, Boston, MA (*Presenter*)
George L. Charpied, MS, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand definition of velopharyngeal insufficiency and the augmentation technique presented here.

OBJECTIVES: Velopharyngeal insufficiency (VPI) has traditionally been treated using local flap procedures, which are technically challenging and result in varied success. Inability to close the velopharyngeal port results in hypernasal speech and nasopharyngeal regurgitation. The aim of this study was to determine the efficacy of posterior wall augmentation using Alloderm® in the treatment of VPI. **STUDY DESIGN:** Retrospective review of four patients. **METHODS:** Four patients who had undergone pharyngeal wall augmentation were studied. All patients had undergone pre- and post-operative flexible-video-nasopharyngeal endoscopy, fluoroscopic quantitative velography (FQV), and voice onset time analysis. Augmentation consisted of exposing the oropharynx as for a tonsillectomy, then placing a "roll" of implantable Alloderm® into a submucosal tunnel created on the posterior wall of the nasopharynx at the level of Passavant's ridge. **RESULTS:** Preoperatively, three patients had mild to moderate hypernasality, and one patient had severe hypernasality as well as nasopharyngeal regurgitation. Postoperatively, two patients with mild symptoms demonstrated reduced FQV measurements, speech effort, and voice onset time. A third patient with moderate hypernasality showed subjective improvement in speech. The patient with severe symptoms showed no improvement in either hypernasality or nasal regurgitation. **CONCLUSIONS:** Augmentation of the posterior pharyngeal wall using implantable Alloderm® is technically simple and efficacious for treating mild hypernasal speech symptoms in patients with VPI. However, it is not effective for patients with more severe hypernasality or nasopharyngeal reflux.

4:17 The Free Gastro-Omental Flap in Reconstruction of the Total Pharyngectomy Defect
Ralph W. Gilbert, MD, FRCSC, Toronto, ON Canada
Antti Makitie, MD, PhD, Toronto, ON Canada (*Presenter*)
Patrick Gullane, MB, FRCSC*, Toronto, ON Canada
Peter Neligan, MB, FRCSC, Toronto, ON Canada
Dale Brown, MD, FRCSC*, Toronto, ON Canada
Jonathan Irish, MD, FRCSC, Toronto, ON Canada

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) describe the anatomy of the gastro-omental free tissue flap, and 2) explain the indications, advantages and disadvantages of the gastro-omental flap in reconstruction of the total pharyngectomy defect.

OBJECTIVES: The purpose of this study is to evaluate the tubed free gastro-omental flap as a reconstruction for the total pharyngectomy defect. **STUDY DESIGN:** This is a retrospective review of a consecutive series of patients treated at a single tertiary care institution. **METHODS:** Charts of six patients undergoing reconstruction of a total pharyngectomy defect for treatment of carcinoma of the larynx or hypopharynx or complications of its treatment after radiation failure were evaluated with outcome measures of flap success, minor complications, major complications, swallowing results and voice rehabilitation, and survival. **RESULTS:** Six patients underwent reconstruction of a total pharyngectomy defect with a free gastro-omental flap over a 5 year period with a mean follow-up of 18 months. There were no flap losses or re-exploration in this series of patients. Two patients suffered a major complication, one a chylous leak requiring re-exploration and one a massive abdominal wall hernia. There were no anastomotic leaks or fistulas in this group of patients. All but one patient resumed a full normal diet. The one patient with swallowing problems had a distal anastomotic stricture. Four of six patients underwent primary or secondary puncture for tracheoesophageal speech restoration. Voice results were excellent in all 4 patients. Two of the six patients succumbed to their disease within 18 months of surgery. **CONCLUSIONS:** The free gastro-omental flap can be used to reconstruct the total pharyngectomy defect with limited operative and perioperative morbidity. Its unique advantages are the customized size of the pharyngeal tube, allowing voice rehabilitation and effective swallowing and the large omental flap that accompanies it which can be used to facilitate wound healing in the high risk population of patients undergoing surgical treatment after organ preservation strategies have failed.

4:24 DISCUSSION

**MODERATORS: WILLIAM M. KEANE, MD*, PHILADELPHIA, PA, AND
CLARENCE T. SASAKI, MD*, NEW HAVEN, CT**

4:29 A Biomechanical Evaluation of Auricular Cartilage Autografts in Orbital Floor Defect Repair
Teresa M. O, MD, Boston, MA

Michael J. Richard, MD, Chapel Hill, NC
Dennis M. Cullinane, PhD, Boston, MA
Raffi DerSarkissian, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate the structural limits and feasibility of auricular cartilage autografts for use in the reconstruction of orbital floor defects.

OBJECTIVES: The purpose of this study was to determine the mechanical efficacy of auricular cartilage grafts in the repair of various sized orbital defects and thus to provide safety limit parameters for their application in orbital floor repair. Our goal was to develop a model to quantify the biomechanical behavior of these cartilage constructs and to identify any limit in floor defect size that an average piece of adult auricular cartilage could safely span. **STUDY DESIGN:** Basic biomechanical testing. **METHODS:** We harvested 37 auricular cartilage specimens from 21 adult cadavers. Using holes in a plexiglas baseplate simulating orbital defects of various size, we determined the structural properties of auricular cartilage grafts in simulated defect repair. A mechanical test frame was used to insert a 2.5 cm diameter hemispherical, simulating an adult eyeball, into four different sized defect holes representing 100% or a factor of 1.0 times, 120% or 1.2 times, 140% or 1.4 times, and 160% or 1.6 times of the mean minor diameter of the cartilage grafts. We calculated structural stiffness at three different loading stages, structural failure strength, and the percent failure of the entire system for each defect size. **RESULTS:** In our percent-system-failure analysis we found that a threshold exists where the 100% and 120% defects showed no complete system failures while the 140% and 160% defects demonstrated 20% and 60 % system failure rates, respectively. The structural stiffness curves showed a similar trend, with our ANOVA demonstrating a significant difference in mechanical performance between the defect sizes ($p = 0.03$). The curve representing the 160% defect size demonstrating significantly reduced structural stiffness in comparison to the 100%, 120%, and 140% defect curves. A slight trend was detectable between the 120% and 140% defects, but this was not significant ($p = 0.09$). **CONCLUSIONS:** Although we do not approximate in vivo physiological loads generated by the orbital contents, our findings clearly indicate that a significant biomechanical and functional threshold exists between the 120% and 140% defect sizes. We therefore recommend that an alternative repair procedure to auricular cartilage grafting be employed in orbital blow-out defects greater than 120% of the minor diameter of the auricular graft. This is probably a relatively conservative guideline. However, in defects approaching 140% of the cartilage graft minor diameter, the risk of system failure increases dramatically. More work needs to be done to determine with greater resolution the biomechanical behavior of these grafts within the 120% to 140% defect range.

4:36 The Effects of Tissue Plasminogen Activator on Scar Tissue Formation

Adam D. Schaffner, MD+, Stony Brook, NY
Hoang-Lan T. Nguyen, PhD, Stony Brook, NY
Ghassan J. Samara, MD, Stony Brook, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the effects of tissue plasminogen activator on scar tissue formation.

OBJECTIVES: Scar formation is an issue that concerns every patient who undergoes surgery. Agents such as Vitamin E, steroids, and silicone have been used empirically to reduce scar formation. We hypothesize that early events in wound healing such as fibrin deposition and resorption may influence scar tissue formation. If the amount of fibrin deposited at a site of wound healing could be minimized, this may result in decreased scar tissue formation. Plasmin cleaves fibrinogen to fibrin and tissue plasminogen activator (t-PA) activates plasminogen. **STUDY DESIGN:** We studied the role of these early events by using t-PA knockout and plasminogen knockout mice with a C-57 genetic background with a dorsal skin wound model. **METHODS:** A two-centimeter incision was made on the dorsal surface of each mouse. The mice were sacrificed on various post-operative days. Separate tissue samples were stained for hematoxylin and eosin as well as for trichrome. **RESULTS:** An investigator blinded to the genotypes measured the width of the collagen and fibrin bands, and the relationship between the width of these bands and the genotype was determined. Representative histology will be presented. **CONCLUSIONS:** Since this relationship may lead to the development of new therapies that reduce scar tissue formation, the role of other thrombolytic and anti-thrombolytic agents in wound healing should be further investigated to precisely identify those agents that play the most significant role in scar tissue formation.

4:43 Temporalis Fascia Graft Repair of Nasal Septal Perforations Through an Open Rhinoplasty Approach

David A. Kieff, MD, Wellesley, MA
Matthew D. Byers, MD, Sarasota, FL
William E. Silver, MD*, Atlanta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand how to repair nasal septal perforations through an open rhinoplasty approach using temporalis fascia grafts. They should be able to compare this technique to others previously described.

OBJECTIVES: To describe the technique of repairing septal perforations with temporalis fascia through an open rhinoplasty approach, and to report the successful application of this technique in 35 cases. **STUDY DESIGN:** Case series, n=36. **METHODS:** Patients who lacked autoimmune or connective tissue diseases, and who sought repair of their nasal septal perforation, underwent repair of the perforation under general anesthesia. The perforation was repaired with autologous temporalis fascia, placed through an open rhinoplasty approach. The size of the perforation was measured preoperatively. Intranasal splints or packing was left in place for 7 days post operatively. Surgical success was defined as persistent closure of the perforation at 6 weeks post operatively. **RESULTS:** The average size of the perforations was 2.1 cm in diameter. Thirty five of thirty six patients had successful closure of their nasal septal perforation. **CONCLUSIONS:** Closure of nasal septal perforations using temporalis fascia placed through an open rhinoplasty approach is highly successful.

4:50 DISCUSSION

4:55 SYMPOSIUM: MASTERS IN OTOLARYNGOLOGY/SESSION II

MODERATOR: David W. Kennedy, MD*, Philadelphia, PA
PANELISTS: Kenneth M. Grundfast, MD*, Boston, MA - Pediatric
Ralph B. Metson, MD*, Boston, MA - Rhinology
Robert T. Sataloff, MD*, Philadelphia, PA - Laryngology

5:35 Adjourn

7:00 - Banquet - Terrace Room
10:00

SUNDAY, JANUARY 26, 2003

7:00 - **Registration** - Mezzanine Foyer

Noon

7:00 - **Speaker Ready Room** - Fairfield Room

Noon

7:00 - **Business Meeting** - Cambridge Room, 4th Floor

7:40

7:00 - **Continental Breakfast with Exhibitors** -

7:45 Georgian/Arlington/Berkeley/Clarendon Rooms

7:45 - **Scientific Sessions** - Imperial Ballroom

Noon

**MODERATORS: MARGARET A. KENNA, MD*, BOSTON, MA, AND
ROBERT F. WARD, MD*, NEW YORK, NY**

7:45 **HONORABLE MENTION - RESIDENT RESEARCH AWARD**

Afrin is no Different than Ciprofloxacin for Preventing Post-Operative Otorrhea or Obstructed Tubes

Veena V. Kumar, MD+, Philadelphia, PA

John Gaughan, PhD, Philadelphia, PA

Wasył Szeremeta, MD, MBA, Philadelphia, PA

Glenn Isaacson, MD*, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss factors affecting post operative otorrhea and tube patency. Participants will also be able to compare various otological preparations and their associated incidences of post operative otorrhea and tube patencies. The audience will understand methods for treating post operative otorrhea and clogged tubes.

OBJECTIVES: Post-operative otorrhea is the most common complication following myringotomy and tube placement. Various methods have been reported to reduce this complication, including the use of otological preparations. We decided to compare post operative complications including otorrhea and clogged tubes following the use of otological solutions. **STUDY DESIGN:** Retrospective case/control series. **METHODS:** We reviewed all bilateral myringotomy and tube placement operations performed by two full-time attending pediatric otolaryngologists during a nine month period. Data from 577 patients who had undergone surgery for otitis media were collected. Demographic and clinical variables including age, gender, number of tubes in the past, previous adenoidectomy, if receiving antibiotics at time of surgery, type of effusion present at surgery and type of drop prescribed post operatively were recorded. All patients were evaluated in the office within 4 weeks post operatively. Multivariate logistic regression analysis was used to estimate the relationship of these variables with the occurrence of otorrhea and tube patency. Odds ratios were calculated. **RESULTS:** No difference in post operative otorrhea or tube patency was found between ciprofloxacin otological and oxymetazoline solution (Afrin/Visine LR). The only positive predictor of post operative otorrhea was the use of antibiotics around the time of surgery. A significant relationship was found between cortisporin suspension and decreased tube patency. **CONCLUSIONS:** There is no difference between the use of ciprofloxacin otic solution (Ciloxan) and oxymetazoline solution (Afrin/Visine LR) and the incidence of post operative otorrhea following myringotomy and tube placement. Use of cortisporin suspension had a higher likelihood of clogged tubes.

7:52 **Lipoblastoma of the Larynx**

Kirt S. Beus, MD, Hershey, PA

John M. Schweinfurth, MD, Hershey, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the pathology, diagnosis, and treatment of head and neck lipoblastoma.

OBJECTIVES: To review the presentation, incidence, pathology, and surgical treatment of lipoblastoma of the head and neck. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** The first known case of a lipoblastoma involving the larynx is described and its treatment discussed. **RESULTS:** A 21 month old child presented with progressive airway obstruction and was found to have a large intra glottic mass extending into the neck. Pathologic study indicated lipoblastoma. Review of the literature revealed no previous incidence of laryngeal involvement. The present case and comprehensive review of the literature are discussed. **CONCLUSIONS:** Lipoblastoma is an exceedingly rare tumor of the head and neck in the pediatric population which may present with airway obstruction. The treatment is surgical, and long-term follow-up for recurrence is needed.

7:59 **Stridor and Associated Co-Morbid Conditions**

Vincent P. Callanan, MD, Buffalo, NY

Linda S. Brodsky, MD*, Buffalo, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand and discuss the significance of non-airway comorbid conditions associated with stridor.

OBJECTIVES: To study the incidence of co-morbid conditions in patients presenting with stridor. **STUDY DESIGN:** Retrospective chart review. **METHODS:** All patients who underwent airway endoscopy in the Department of Pediatric Otolaryngology between January 1, 1999 and December 31, 2000 were identified. Patients presenting with stridor during the study period were selected. **RESULTS:** 872 children underwent airway endoscopy. 286 new patients presented with stridor, 181 males and 105 females (M: = 1.7:1.0). The mean \pm SD age (months) of stridor onset is 7.9 ± 24.1 , range 0.0 to 192.0, median 0.5. Stridor was graded as mild in 166 (58.0%), moderate in 77 (26.9%), severe in 31 (10.8%) and life threatening in 12 (4.2%) patients. 44 (15.4%) patients were otherwise healthy with no comorbid conditions. 142 (49.6%) had one, 52 (18.2%) patients had two, 26 (9.1%) patients had three, 11 (3.8%) patients had four and 11 (3.8%) patients had five comorbid conditions. Gastroesophageal reflux disease (GERD) was diagnosed in 80.1% and was the only comorbid condition in 48.2% of patients. Neurological problems were diagnosed in 14.7%, craniofacial problems in 4.2%, cardiac problems in 6.3%, pulmonary disease in 6.2% and prematurity in 12.6 % of patients. Less frequently encountered comorbidities included, acute life threatening events, foreign body in the airway, congenital immunodeficiency, obesity, central hypoventilation, drooling, feeding problems, failure to thrive, environmental and food allergy. **CONCLUSIONS:** Recognizing the prevalence and significance of associated comorbid conditions aids the diagnosis and management of these often complex patients. GERD

is becoming more prominent in the awareness of physicians managing the airway in the pediatric patient with stridor.

8:06 The Biology and Management of Nasal Glioma and Encephalocele

Reza Rahbar, DMD, MD, Boston, MA
Resto A. Vicente, MD, Boston, MA
Antonio R. Perez-Atayde, MD, Boston, MA
Liliana C. Goumnerova, MD, Boston, MA
Trevor J. McGill, MD, Boston, MA
Gerald B. Healy, MD*, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to have a better understanding of the presentation and management of nasal glioma and encephalocele.

OBJECTIVES: To review the biology of nasal glioma and encephalocele, and to present an algorithm for preoperative evaluation and surgical management. **STUDY DESIGN:** Retrospective review and analysis. **METHODS:** Setting: Tertiary care medical center: 1972-2002. Patient: Fifteen patients: Glioma (N=9), Encephalocele (N=6). Outcome: Age at the time of presentation, sex, signs and symptoms, imaging findings, surgical approach, pathology, complications, rate of recurrence, follow-up. **RESULTS:** Fifteen patients with age ranged from 10 days to 6 years (mean 15 months). Male to female ratio is 7/8. Initial presentation: intranasal mass (n=11), dorsum-glabellar mass (N=4). Imaging work up: skull tomogram (N=2), MRI and/or CT (N=13). Surgical approach: extracranial (N=10), combined intra-extracranial (N=5). Complications: CSF leak (N=1), epiphora (N=1), scar revision (N=2). Rate of recurrence: 13%. Follow up 1-14 years (mean = 4). **CONCLUSIONS:** Nasal glioma and encephalocele are rare, benign, congenital lesions with a potential for intracranial extension. Evaluation should include a complete rhinological and neurological exam. Preoperative imaging with a thin cut axial and coronal CT scan and/or multiplanar MRI is essential. Surgical intervention should be performed soon after diagnosis to alleviate the increased risk of meningitis. A frontal craniotomy approach is recommended if intracranial extension is identified based on preoperative evaluation followed by an extra-cranial resection. If no evidence of intracranial extension, a conservative extracranial approach is recommended.

8:15 DISCUSSION

**MODERATORS: MARGARET A. KENNA, MD*, BOSTON, MA, AND
ROBERT F. WARD, MD*, NEW YORK, NY**

8:23 Foregut Duplication Cysts of the Upper Aerodigestive Tract: Presentation, Diagnosis and Management

Denise A. Sherman, MD, Albany, NY
Anand V. Kasbekar, Nottingham, England
Vania Nose, MD PhD, Boston, MA
Reza Rahbar, DMD, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to consider foregut duplication cysts in the differential diagnosis of an upper aerodigestive tract mass in a child. They should be able to discuss its differences from other congenital lesions that appear in this location.

OBJECTIVES: This study reviews the presentation, diagnosis and management of the foregut duplication cyst, an uncommon congenital mass. It also elucidates the fact that different anatomic sites may be affected. **STUDY DESIGN:** This study retrospectively reviews our experience with upper aerodigestive tract foregut duplication cysts over a thirteen year period. **METHODS:** Twenty patients with twenty-one foregut duplication cysts confirmed pathologically were reviewed. Their presenting symptoms, anatomic site(s) affected, investigations and treatment were analyzed. **RESULTS:** The patients all required surgical treatment and ranged in age from 9 days to 7 years (mean 2.5 years). Presentation varied based on anatomic site of involvement with half the patients being asymptomatic. Almost half the patients had no investigations, while the others had a CT or MRI of the neck. **CONCLUSIONS:** Foregut duplication cysts, although uncommon, are not rare. They may be asymptomatic, although concerns arise regarding the development of respiratory distress or feeding difficulties. Imaging can help surgical planning but appears only to be used in approximately half of cases.

8:30 Safety of Long Distance Adenotonsillectomy

John M. Schweinfurth, MD, Hershey, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the potential impact of limited access to health care providers on safety of adenotonsillectomy.

OBJECTIVES: To examine the effect of access to care providers on perioperative travel as well as assess any impact on safety for patients undergoing procedures at risk for significant hemorrhage. **STUDY DESIGN:** Retrospective analysis of consecutive patients. **METHODS:** The records of patients undergoing tonsillectomy, adenoidectomy, or adenotonsillectomy using electrocautery between May 2000 and July 2002 were examined consecutively. Patients traveling more than 45 miles one-way were included in the study. Procedure, age, and hospitalizations secondary to dehydration or postoperative hemorrhage were recorded. The minimum postoperative follow-up was three weeks. **RESULTS:** One hundred seventy patients underwent tonsillectomy or adenotonsillectomy and fifteen adenoidectomy alone during the study period. Of these, 41 (22%) traveled further than 45 miles for treatment. Four patients were adults. Fourteen long-distance post-tonsillectomy patients under the age of six were admitted post-operatively for routine overnight observation. There were two admissions at outside community hospitals for post-tonsillectomy hemorrhage at seven and eight days after surgery in a 2 and 3 year old, respectively for a rate of 4%. One adult patient returned to clinic for treatment of hemorrhage. There were no admissions for dehydration in the study population and no post-operative events in the adenoidectomy population. **CONCLUSIONS:** Patients are traveling farther in order to find participating providers. Travel distance does not appear to be a contraindication to outpatient adenotonsillectomy. However, access to local emergency care is necessary.

8:37 Otolaryngological Perspective of Pediatric Autoimmune Neuropsychiatric Disorders and Streptococcal Infections (PANDAS)

Rajendra D. Bhayani, MD+, New York, NY
Prajoy P. Kadkade, MD, New York, NY
Max M. April, MD, New York, NY
Robert F. Ward, MD*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand, identify and manage the PANDAS in children.

OBJECTIVES: To study the seven cases of PANDAS diagnosed at our institution by otolaryngologists and managed successfully. **STUDY DESIGN:** Retrospective

chart review and review of literature. **METHODS:** Seven pediatric patients were diagnosed by senior authors as having PANDAS when they presented for sore throat and recurrent tonsillitis at our institution. All of them had positive streptococcal throat culture and diagnostic high ASO titre. The associated neuropsychiatric disorders identified at the time of presentation were obsessive-compulsive (OCD) and facial tic. Four patients underwent tonsillectomy and three patients were treated with antibiotics only. All patients showed remarkable improvement in their neuropsychiatric illness. The etiopathology of the disorder and treatment options were reviewed. **RESULTS:** All seven patients with PANDAS were conclusively diagnosed with streptococcal throat infection with throat culture and ASO titre. After medical or surgical management all patients recovered from neuropsychiatric disorder. **CONCLUSIONS:** This study adds to scant literature on PANDAS in otolaryngology subspecialty. Since large number of pediatric patients with streptococcal pharyngitis are managed by otolaryngologists, the awareness and high index of suspicion of this disorder is important for early diagnosis and management of this disorder. Timely surgical and/or medical management is equally effective.

8:44 Recurrent Fetal Rhabdomyoma of the Head and Neck

Tulio A. Valdez, MD, Boston, MA
William A. Numa, MD, Boston, MA
Marc Lessin, MD, Boston, MA
Mark S. Volk, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to include fetal rhabdomyoma in the differential of head and neck masses, explain its pathogenesis and discuss its management.

OBJECTIVES: Extracardiac rhabdomyomas are exceedingly rare tumors. Fetal rhabdomyoma (FR), the least common type of rhabdomyoma, occurs more often in the subcutaneous tissues of the head and neck. This is a benign, normally well circumscribed lesion with non-infiltrating margins. **STUDY DESIGN:** Case presentation and review of the literature are presented. **METHODS:** Radiographic and histopathologic findings from this case as well as diagnostic and treatment strategies for this rare condition are discussed in detail. **RESULTS:** We present a case of a fetal rhabdomyoma first detected in utero by a routine ultrasound. An elective cesarean section was performed at week 35 of gestation. The large mass involving the left temporal area and the posterior and lateral aspect of the upper neck was resected prior embolization 10 days after birth. Pathology results were consistent with fetal rhabdomyoma. The patient has presented with 2 recurrences following initial excision. **CONCLUSIONS:** Fetal rhabdomyoma is a benign neoplasm of striated muscle tissue. It should be differentiated from its malignant counterpart rhabdomyosarcoma. Fetal rhabdomyoma is most commonly treated by local excision with less than 10 cases of recurrence documented in the literature.

8:51 DISCUSSION

**MODERATORS: THOMAS L. KENNEDY, MD*, DANVILLE, PA, AND
PEAK WOO, MD*, NEW YORK, NY**

8:58 Cardio Vocal Syndrome in an Infant: A Case Report

Adarsh Vasanth, BS, Boston, MA
Kasra Rastani, MD, PhD, Boston, MA
Elie E. Rebeiz, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate a case of cardio vocal syndrome in an infant. To our knowledge, this is the fifth reported case in the literature. All of these infants have unilateral vocal cord paralysis and congenital heart disease. Possible etiologies, management options and outcomes are also presented.

OBJECTIVES: Cardio vocal syndrome in an infant describes left laryngeal palsy or paresis related to intrinsic heart disease. There are only a handful of reported cases of infants with cardio vocal syndrome in the literature. We report one such case and review the literature for clinical presentations, management and outcomes for this syndrome. **STUDY DESIGN:** This is a case presentation of a thirteen-day old female with ventricular septal defect (VSD), atrial septal defect (ASD), and coarctation of the aorta. She presented with a weak, hoarse cry and difficulty feeding, work up noted a left vocal cord paralysis with no evidence of laryngeal cleft or tracheoesophageal fistula. **METHODS:** The cardio vocal syndrome in an infant was first reported in 1985. Since then, a few other cases have been reported in the literature. We review these cases and present their management and outcomes. **RESULTS:** There are four reported cases of cardio vocal syndrome in infancy. All four infants presented with hoarseness—three of these infants had VSD, and one had Ebstein's anomaly (a downward displacement of the tricuspid valve in the right ventricle). Treatment for this presentation is the correction of the heart defect. All infants with VSD had resolution of their hoarseness after surgical repair of the heart defect. Our patient's VSD is to be repaired pending weight gain. **CONCLUSIONS:** We report a rare case of cardio vocal syndrome in an infant with a left laryngeal palsy or paresis related to an intrinsic heart disease. The etiology of the vocal cord paralysis, clinical presentation, treatment options, and outcomes of the handful of reported cases are discussed.

9:05 Residual Pouch Determinants in Endoscopic Staple-Assisted Esophagodiverticulostomy (ESED) for Zenker's Diverticula

William J. Richtsmeier, MD, PhD*, Cooperstown, NY
Jose R. Monzon, MD, Cooperstown, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to better counsel patients with regards expectations for ESED Zenker's surgery.

OBJECTIVES: At least three staplers are commercially available for ESED. This study reviewed the stapler options for ESED so as to identify potential limitations of this procedure. Stapler modification to decrease residual pouch size has been reported but no quantitative measurement of the benefit has been documented. **STUDY DESIGN:** Experiments measuring the residual pouch were carried out using the previously reported, neoprene glove as the Zenker's diverticulum model. **METHODS:** Two stapler designs from U. S. Surgical and one from Ethicon Corp were compared measuring the residual pouch length. Where possible, stapler anvil's were shortened and retested. One stapler model cannot be modified without damaging the mechanism. **RESULTS:** Each stapler yielded the same residual pouch when use in the recommended manner. The modified anvil staplers gave a smaller residual pouch but had differing properties. The potential for pouch perforation depends, in part, on the shape of the anvil. **CONCLUSIONS:** ESED continues to be considered a relatively safe procedure. To provide maximum safety, and efficacy, the surgeon needs to be aware of the stapler differences. Modifications of the staplers may decrease the depth of the residual pouch but carries an added liability. This information may be valuable when evaluating patients for Zenker's surgery.

9:12 Management of Vascular Malformations of the Mandible and Maxilla: A Report of 31 Cases

Mark S. Persky, MD*, New York, NY
Helen J. Yoo, MD, New York, NY
Alejandro Berenstein, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate the effectiveness of treating VMs with a multidisciplinary approach and emphasis on endovascular therapy.

OBJECTIVES: Vascular malformations (VMs) involving the mandible and maxilla are uncommon and no uniform treatment of these lesions has been defined. The purpose of this study is to evaluate the effectiveness of treating VMs with a multidisciplinary approach and emphasis on endovascular therapy. **STUDY DESIGN:** Retrospective chart review of patients. **METHODS:** The treatment of thirty-one patients (13 males, 18 females) with mandibular and/or maxillary VMs presenting between 1979-2001 was reviewed. **RESULTS:** Thirteen patients (42%) presented with mandibular VMs and an equal number of patients had maxillary VMs. Five patients had involvement of both the mandible and maxilla. Twenty-six patients (84%) had adjacent soft tissue extension while 5 patients had a vascular malformation isolated either to the mandible (4 cases) or maxilla (1 case). Twenty-six cases consisted of arterial VMs and 5 patients had venous and capillary types. Twenty-six patients (84%) were treated with embolization only, while 5 patients (16%) underwent combined embolization and surgical resection. The "cure" rate was 70% for mandibular malformations and 46% for maxillary lesions. None of the combined maxillary/mandibular lesions were "cured" but all achieved improvement or stabilization of their symptoms. The follow up range was 1 to 22 years with an average of 6.7 years. **CONCLUSIONS:** The location and extent of VMs dictate the treatment and resulting success. Endovascular therapy alone can effectively "cure" most mandibular and maxillary VMs with limited soft tissue involvement. Extensive VMs can be stabilized with control of symptoms, but eradication of the vascular malformation is unlikely even with combined surgery and embolization.

9:19 "Push" Versus "Pull" Percutaneous Endoscopic Gastrostomy Tube Placement in Patients With Advanced Head and Neck Cancer

Anthony T. Tucker, BA, Augusta, GA
Mark D. Ghegan, BA, Augusta, GA
Christine G. Gourin, MD, Augusta, GA
Robert G. Martindale, MD, PhD, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the pros and cons of the push versus pull methods of percutaneous endoscopic gastrostomy (PEG) tube placement in patients with head and neck cancer.

OBJECTIVES: PEG placement via the pull method prior to definitive treatment of advanced head and neck cancer has been reported to result in a significantly higher complication rate when compared to PEG placement after tumor extirpation. These findings have led to a renewed interest in the push, or Russell introducer, method of PEG placement at our institution when PEG is required prior to definitive treatment of advanced head and neck cancer. We hypothesized that the push method of PEG placement is associated with a lower incidence of complications in this patient population. **STUDY DESIGN:** Retrospective chart review. **METHODS:** The medical records of all patients presenting to the Medical College of Georgia who were diagnosed with squamous cell cancer of the head and neck between 1999-2001 were retrospectively reviewed. Patients who required PEG placement as part of their treatment comprised the study population. **RESULTS:** The push PEG technique was used in 29 patients and the pull technique was used in 50 patients. There was a statistically significant difference in the complication rate between the two techniques. Patients who underwent placement via the pull technique had an overall complication rate of 30% (15/50) versus a 0% (0/29) complication rate in patients undergoing the push technique ($p=0.0006$, Fisher's Exact test). **CONCLUSIONS:** The use of the push technique significantly reduces the risk of complications in patients with advanced head and neck cancer. We recommend patients with advanced head and neck cancer receive PEG tube placement via the push method (Russell technique).

9:26 DISCUSSION

9:34 Break/Poster Presentations/Visit with Exhibitors -

Georgian/Arlington/Berkeley/Clarendon Rooms

**MODERATORS: FRANK E. LUCENTE, MD*, BROOKLYN, NY, AND
PATRICK J. GULLANE, MD*, TORONTO, ON**

9:58 Assessment of Otolaryngology Resident Physician Educational Competency via an Internet-Database System

Rick M. Roark, PhD, Valhalla, NY
Steven D. Schaefer, MD*, New York City, NY
Daniel I. Branovan, MD, New York City, NY
James C.L. Li, MD, New York City, NY
Craig H. Zalvan, MD, Valhalla, NY
Ralph P. Lambiasi, MPA, New York City, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to determine the strength and viability of an internet database system to facilitate the process of competency evaluation in their teaching program.

OBJECTIVES: The Accreditation Council for Graduate Medical Education requires that competency of otolaryngology residents be regularly and objectively evaluated by academic faculty. Implementation of these requirements is especially challenging to academic programs having multiple surgical and clinical training sites. Additional concerns are protection of faculty-resident relationships, enhancement of resident training, and achieving timely and reliable assessments, while attempting to minimize the impact upon existing resident and faculty responsibilities. **STUDY DESIGN:** N/A. **METHODS:** Our academic department, comprising five training hospitals and 28 full-time faculty, implemented a computer-based system with a database framework that permits evaluations to be entered by desktop computer or handheld organizer and transported over the institution network or internet. **RESULTS:** The database may be queried to provide custom reports, including compilation of outcomes, performance, and assessment of both individual and group performance. Administrative reports help to identify strengths and weaknesses within the training program, resident, and faculty, and to guide early remediation curricula for individual residents according to need. **CONCLUSIONS:** Due to the increasing administrative demands upon training programs, a computer-assisted implementation of competency evaluation that minimizes paperwork and overhead for residents, faculty, and staff can be useful to administrative staff and adjunctive to the resident training program.

10:05 The Efficacy of Anatomically Based Multilevel Surgery for Obstructive Sleep Apnea

Yi H. Kao, MD, State College, PA
Yelizaveta Shnyder, MD, New York, NY (Presenter)
Kelvin C. Lee, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to identify the sites of obstruction for OSA, explain their role in OSA and discuss management options for these patients.

OBJECTIVES: Most reports in the literature focus on the efficacy of a single procedure for obstructive sleep apnea. We review the overall efficacy of a surgical methodology based on localizing the level of anatomical obstruction for each patient and surgical correction of the nasal, oropharyngeal, or hypopharyngeal obstruction. **STUDY DESIGN:** Retrospective review of cases performed by a single practitioner using a systematic approach to surgery for obstructive sleep apnea with preoperative and postoperative sleep studies. **METHODS:** Patients who had undergone surgery for obstructive sleep apnea were identified and their medical records reviewed for the preoperative sleep study, physical examination, the surgical approach used, and the overall results achieved. **RESULTS:** Forty-two patients with sleep study documented obstructive sleep apnea had surgery as dictated by their history and physical examination. Surgery involved at least two levels of obstruction usually performed in two stages. All patients reported symptomatic improvement. Thirty-eight patients had greater than 50% improvement of their preoperative RDI and RDI of less than twenty on their postoperative sleep study performed six months after surgery. None of the patients suffered any significant peri-operative complications. **CONCLUSIONS:** In our retrospective review, the use of an anatomically based methodology in approaching patients with obstructive sleep apnea seems to offer a higher efficacy than a single procedure as reported in the literature. Further prospective controlled studies are needed to determine the specific advantages of this type of approach.

10:12 Surgical Management of Recalcitrant Hyperparathyroidism

Phillip K. Pellitteri, DO, Danville, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss and apply a practical, cost effective strategy for the surgical management of patients with recurrent/persistent hyperparathyroidism.

OBJECTIVES: This discussion focuses on a methodologic approach which optimizes the opportunity for success in managing patients with recurrent/persistent hyperparathyroidism. A cost effective strategy is presented which may be applied to patients with recurrent/persistent disease from primary, secondary or tertiary hyperparathyroidism. **STUDY DESIGN:** Representative case studies drawn from a single surgeon/institution experience will serve to highlight specific focus concepts, such as: correlative imaging techniques for localization; surgical technique and approach; confirmatory intraoperative PTH assessment and the use of nuclear probes. **METHODS:** Retrospective review of 30 patients surgically managed for recurrent/persistent hyperparathyroidism by the same surgeon at an academic tertiary care medical center over an eight year period. **RESULTS:** 90% (27/30) of patients with recalcitrant hyperparathyroidism achieved normocalcemia with at least 6 months follow-up. 2 patients remain mildly hypercalcemic (serum Ca⁺⁺ < 11.0 mg/dl). 1 patient with parathyroid carcinoma died of disease. Intraoperative PTH testing was predictive of normocalcemia in all patients who achieved greater than a 50% reduction in the intact PTH level as measured before and after resection of hyperfunctional parathyroid tissue. Complications were limited to 6 patients with transient hypocalcemia and 1 patient with seroma. **CONCLUSIONS:** A methodologic and practical approach to re-exploration utilizing correlative localization studies and intraoperative PTH measurement, represents a highly effective management strategy for patients with recurrent/persistent hyperparathyroidism.

10:19 Treatment Outcomes With Tinnitus Retraining Therapy

Jed A. Kwartler, MD, Springfield, NJ
Nikhil Bhagat, BS, Newark, NJ
Christine B. Hoffman, MA, Springfield, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) understand the model for tinnitus retraining therapy, and 2) be able to compare TRT to other forms of tinnitus therapy.

OBJECTIVES: Tinnitus retraining therapy (TRT) is based on a tinnitus model described by Dr. P. Jastraboff whereby a noise generator, coupled with directed behavioral therapy, is used to reduce or eliminate awareness or annoyance caused by the tinnitus signal. We have used TRT to manage 40 tinnitus patients with at least one year followup. We will discuss our treatment protocol, patient characteristics and specific outcomes with TRT. **STUDY DESIGN:** Retrospective chart review of patients who have undergone TRT with at least one year followup. **METHODS:** Subjects were evaluated with pure-tone audiometry, OAEs, psychoacoustic measurements of tinnitus, and tinnitus handicap inventory. Additional tests were ordered as indicated by patient history or exam. TRT was administered according to the methodology described by Jastraboff. **RESULTS:** Reduction in tinnitus awareness and annoyance in approximately 75% of patients. **CONCLUSIONS:** We believe that TRT is an effective therapy for patients with tinnitus, especially when compared to other currently available treatment modalities.

10:26 DISCUSSION

**MODERATORS: FRANK E. LUCENTE, MD*, BROOKLYN, NY, AND
PATRICK J. GULLANE, MD*, TORONTO, ON**

10:34 Surgical Strategy for Thyroid Bed Recurrence in Patients With Well Differentiated Thyroid Carcinoma

Carsten E. Palme, FRACS, Toronto, ON Canada
Jeremy L. Freeman, MD FRCS FACS, Toronto, ON Canada

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the diagnostic and therapeutic complexities associated with treating infield recurrence of well differentiated thyroid cancer and have a sound and systematic approach to dealing with this condition in a safe and oncological manner with little added morbidity.

OBJECTIVES: To understand the complexities associated with infield recurrence of well differentiated thyroid cancer (WTC), present sound surgical strategies to deal with this problem in a manner that minimizes morbidity, adheres to oncological principle and achieves appropriate cure rates. **STUDY DESIGN:** Retrospective analysis of patients treated at a tertiary referral center. **METHODS:** Between 1992 and 2002, 10 patients with infield recurrence of WTC were identified and managed according to an algorithm taking into account clinical, biochemical and radiological indices. All underwent revision surgery and we applied our technique of wide field exposure by horizontally sectioning all the ipsi- or bilateral strap muscles. We use blunt "peanut" dissection to identify the recurrent laryngeal nerves and parathyroid glands. **RESULTS:** There were 4 male, 6 females with a mean age of 42 years (23 - 74). The average time between procedures was 52 month (2 - 120). The diagnosis was established by clinical exam, thyroglobulin determination and/or imaging. All were treated with surgery and postoperative I 131. The average follow-up was 7 (1 - 25) complications; 1 recurrent laryngeal nerve palsy and no patients with permanent hypoparathyroidism. One patient continues to have an elevated thyroglobulin. **CONCLUSIONS:** The management of infield recurrence of WTC presents both a diagnostic and therapeutic challenge due to the disparity in presentation, the complexity of the anatomy and indistinct tissue planes. The optimal treatment of these patients is surgical resection and postoperative I 131. This can be accomplished safely and with little morbidity. The key to this type of surgery is a sound and systematic approach which will be discussed.

10:41 Aural/Auricular Rehabilitation in Congenital Aural Atresia/Microtia: An Integrated New Approach

Jack J. Wazen, MD*, New York, NY

Thomas Romo III, MD, New York, NY
Soha N. Ghossaini, MD, New York, NY
Jaclyn Spitzer, PhD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to learn a new approach for a combined 3 step surgical reconstruction and hearing rehabilitation of patients with congenital aural atresia/microtia.

OBJECTIVES: The purpose of this study is to demonstrate the safety, efficacy, and results of combining the external ear reconstruction using the porous polyethylene implant with superficial vascularized temporalis fascia flap, and a titanium retained cochlear stimulator (BAHA), in cases of unilateral and bilateral congenital aural atresia/microtia. **STUDY DESIGN:** This is a prospective study of 6 patients with congenital aural atresia/microtia 5 to 14 years of age. Four had unilateral, and 2 bilateral atresia/microtia and conductive hearing loss. All 6 patients were poor candidates for meatoplasties and middle ear reconstruction. **METHODS:** The complete rehabilitation of patients with unilateral atresia/microtia was planned in three surgical steps. The first procedure included the implantation of the auricular prosthesis. The second procedure consisted of flipping the lobule and the insertion of the titanium implant, and at the third stage, 4 months later, the implant was exteriorized and the percutaneous abutment connected to the BAHA. Patients with bilateral atresia underwent their bilateral combined reconstruction in 4 steps. The details of the surgical steps will be clearly described and illustrated. **RESULTS:** All 6 patients were implanted successfully with no complications and no extrusion of implants. All patients were fully satisfied with their hearing and cosmetic results. **CONCLUSIONS:** Combining the porous polyethylene—temporalis fascia flap technique with the BAHA has provided our patients with dual cosmetic and functional results with a reduced number of ambulatory procedures, at a reduced cost, with no donor site morbidity, and predictable hearing results with no risks of restenosis or facial palsies.

10:48 Mitomycin C for the Treatment of Pharyngeal Stricture Following Total Laryngopharyngectomy and Microvascular Free Tissue Reconstruction

Donald J. Annino, Jr., MD, DMD, Boston, MA
Laura A. Goguen, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to assess the role of Mitomycin C in the management of pharyngeal stricture following total laryngopharyngectomy and free flap reconstruction.

OBJECTIVES: To assess the role of Mitomycin C in the management of pharyngeal stricture following total laryngopharyngectomy and free flap reconstruction. **STUDY DESIGN:** Five patients since 1998 underwent evaluation and treatment for pharyngeal stricture following total laryngopharyngectomy and free flap reconstruction. The method of reconstruction included four tubed radial forearm free flaps and one jejunal free flap. All patients underwent a barium swallow and endoscopic examination and were proven to be free of recurrent disease. **METHODS:** The patients were taken to the operating room. Following dilation, the area of stricture was exposed and 1ml of 0.4 mg/ml MMC was applied for four minutes using a cotton pledget. The patients were then followed symptomatically and with barium swallows. **RESULTS:** All five patients experienced a marked relief from their pharyngeal strictures. Those that developed a resticture experienced a substantial increase in length of time between dilations. No complications occurred. **CONCLUSIONS:** MMC is a safe treatment for pharyngeal stricture following total laryngopharyngectomy and free flap reconstruction. It can eliminate the need or at least decrease the frequency of future dilations.

10:55 DISCUSSION

11:00 OTOLOGY PANEL: ADVANCES IN DIAGNOSIS AND TREATMENT OF SENSORY NEURAL HEARING LOSS

MODERATOR: Dennis S. Poe, MD*, Boston, MA
PANELISTS: Noel L. Cohen, MD*, New York, NY
Barry E. Hirsch MD, Pittsburgh, PA
Julian M. Nedzelski, MD*, Toronto, Canada
Steven D. Rauch, MD*, Boston, MA

12:00 Introduction of Vice President-Elect, Frank E. Lucente, MD*, Brooklyn, NY
Stanley M. Shapshay, MD

12:05 Adjourn

POSTERS

1. Endoscopic Surgical Management of Isolated Sphenoid Mucopyocele Presenting With Ophthalmoplegia and Pituitary Dysfunction

Luna D. Bailey, MD, New York, NY
Michael K. Ditkoff, MD, Manhasset, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the endoscopic management of sphenoid mucocele as well as discuss the potential endocrine abnormalities due to pituitary stalk compression by a sphenoid mucocele.

OBJECTIVES: Orbital complications secondary to the close proximity of the paranasal sinuses has been well recognized in Otolaryngology literature. We discuss the case of a 46 year old male who presented with motor palsies of the orbital musculature as well as elevated levels of prolactin and thyroid stimulating hormone (TSH) suggestive of a pituitary adenoma. The patient was being prepared for excision of the adenoma by the neurosurgical team when imaging studies suggested the possibility of the mass originating from the sphenoid sinus and extending upward into the sella turcica. Further evaluation confirmed a sphenoid mucocele compressing the pituitary and creating the ophthalmoplegia and pituitary hormone level abnormalities. Endoscopic drainage and marsupialization of a sphenoid mucopyocele was performed with complete return of orbital mobility and normal TSH and prolactin levels. This unusual case discusses the endoscopic management of a sphenoid mucopyocele presenting with both ophthalmoplegia and pituitary dysfunction. We intend to discuss the patient presentation and course as well as review the literature regarding this associated phenomenon. **STUDY DESIGN:** Case report. **METHODS:** Case report.

RESULTS: Case report. **CONCLUSIONS:** Case report.

2. Percutaneous Endoscopic Gastrostomy Use in Head and Neck Cancer Patients

Soly Baredes, MD*, Newark, NJ
Daniel S. Behin, BA, Newark, NJ (*Presenter*)
Edwin A. Deitch, MD, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the complications associated with the use of the PEG tube for nutritional support in head and neck cancer patients.

OBJECTIVES: Head and neck cancer patients are often nutritionally depleted and may require some form of non-oral nutritional support. This study was done to evaluate the complication rate of percutaneous endoscopic gastrostomy (PEG) tube use in this cohort. **STUDY DESIGN:** Retrospective chart review. **METHODS:** All 55 patients identified with PEG tubes and head and neck cancer managed from January 1995 through August 2001 were included in this study. Their medical records (including in-patient and out-patient progress notes) were reviewed for complications in relation to tumor stage and timing of PEG placement. **RESULTS:** An overall complication rate of 11% (6 patients out of 55) was found with granulation around the PEG site being the most common (3/6). Other complications included migration of the PEG tube (1/6), leakage around the tube (1/6), and tube malfunction (1/6). In terms of tumor stage, 4 complications were noted for Stage IV tumors, and 1 each for Stages I and III. Three complications were noted in the 31 patients undergoing PEG placement at the time of tumor resection and 3 when placed post-operatively in 16 patients. There were no wound infections or other serious complications associated with the PEGs. **CONCLUSIONS:** Head and neck cancer patients benefit from the PEG feeding tube in that it is a safe, non-oral alternative for nutritional support with a low complication rate.

3. The Accuracy of Computed Tomography in the Diagnosis of Chronic Rhinosinusitis

Neil Bhattacharyya, MD, Boston, MA
Marvin P. Fried, MD*, Bronx, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to determine what level of disease on computed tomography represents true sinus disease and discuss its accuracy.

OBJECTIVES: Determine the sensitivity, specificity and diagnostic accuracy of paranasal sinus computed tomography (CT) in the diagnosis of chronic rhinosinusitis (CRS). **STUDY DESIGN:** Prospective dual cohort study. **METHODS:** 171 consecutive patients undergoing endoscopic sinus surgery for CRS were evaluated with CT and staged according to the Lund system. Histopathology from sinus specimens was reviewed and graded. A second contemporaneous control group of 130 patients undergoing CT of the sinus regions for other reasons but without a diagnosis of CRS were also staged. Sensitivity, specificity and the receiver-operator characteristic (ROC) were determined for the sinus CT in the diagnosis of CRS. Positive and negative predictive values were also computed. **RESULTS:** In the disease positive group of patients with CRS, the mean Lund score was 9.8 (95% confidence interval, 9.0-10.6). The mean inflammatory grade on histopathology was 2.3 (range 0-4). For the control (undiseased) group, the mean Lund score was 4.3 (95% CI, 3.5-5.0). The area under the curve for the ROC was 0.802 ($p < 0.001$). Selecting a Lund score cut off value of greater than 2 as abnormal, the sinus CT exhibited sensitivity and specificity of 94% and 41%, respectively. Increasing the cut off value to 4 changed the sensitivity and specificity to 85% and 59%, respectively. **CONCLUSIONS:** The paranasal sinus CT scan exhibits good sensitivity and above average specificity for the diagnosis of CRS. When added to the history and physical findings, CT may add to the diagnostic accuracy of CRS.

4. Role of Bisphosphonates in the Management of Meniere's Syndrome

Kenneth H. Brookler, MD*, New York, NY
Ashutosh Kacker, MD, New York, NY (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to select patients for the use of Bisphosphonates in the management of Meniere's syndrome.

OBJECTIVES: One etiology of Meniere's syndrome may be due localized demineralized of the otic capsule and Bisphosphonates may improve the symptoms of Meniere's syndrome by stabilizing bone resorption. **STUDY DESIGN:** Retrospective study of patients with classic Meniere's syndrome treated with bisphosphonates. **METHODS:** Chart review of the patients of the senior author treated with bisphosphonates with at least 24 months of follow-up. The degree of dizziness and hearing threshold were reviewed. **RESULTS:** 48 patients met the selection criteria. There were 31 females and 17 males. 42/48 patients (87.5%) had complete resolution of dizziness. 1/48 had improvement of their dizziness, 4/48 had persistent dizziness and 1/48 worsening of dizziness. Out of the persistent dizziness group, two patients had dizziness brought on by diet and one patient had worsening of vertigo after a cold (well controlled prior to the cold) which later recovered. No significant improvement was seen in this group with regards to hearing loss. There were no serious side effects of Bisphosphonates in this study. **CONCLUSIONS:** Data from this study suggests that Bisphosphonates improve vestibular dysfunction in patients with Meniere's syndrome. Hearing loss is not affected by Bisphosphonates. Further double blind studies need to be performed to better define the role of Bisphosphonates in Meniere's syndrome.

5. Use of the 70-Degree Diamond Burr in Endoscopic Frontal Sinusotomy

Rakesh K. Chandra, MD, Philadelphia, PA
David W. Kennedy, MD*, Philadelphia, PA
Rodney Schlosser, MD, Charleston, SC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand how recent technology aids in minimally invasive approaches for complex frontal sinus pathology.

OBJECTIVES: Management of frontal sinus pathology may require drill out of bone in the frontal recess for 1) surgical access to the sinus cavity, 2) removal of osteitic foci, or 3) resection of neoplastic tissue. Technologic advances, particularly burs with angles of 45-70 degrees and stereotactic navigational imaging have facilitated the safe performance of this procedure. **STUDY DESIGN:** Retrospective review. **METHODS:** We describe the use of a 70-degree diamond burr in a series of 9 patients with complicated frontal sinus pathology who underwent endoscopic frontal sinusotomy. **RESULTS:** The diagnoses consisted of frontal sinus mucocele (n=4), chronic frontal sinusitis (n=1), and recurrent inverting papilloma (n=4). All patients underwent endoscopic frontal sinusotomy with the 70-degree diamond burr under stereotactic imaging guidance. Partial septectomy was required in 6/9 patients. No complications were attributable to the drill out procedure, despite a preexisting frontoethmoid bony dehiscence in 6/9 patients. One patient suffered a CSF leak during removal of tumor from the skull base. One patient required revision frontal sinusotomy 10 months after the initial procedure, and another required further surgery for residual inverting papilloma on the medial orbital wall. All frontal sinusotomies were patent at last follow-up (range 3-15 months). **CONCLUSIONS:** Endoscopic frontal sinusotomy may be necessary in the management of complicated frontal sinus inflammatory disease and inverting papilloma. The 70-degree diamond burr is a safe and effective tool in the performance of this procedure.

6. A Third Branchial Pouch Cyst Presenting as a Lateral Neck Mass

Daniel D. Charous, MD, Philadelphia, PA
Joseph R. Spiegel, MD, Philadelphia, PA
Mary F. Cunnane, MD, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the embryology, anatomy, presentation, and management of third branchial pouch anomalies.

OBJECTIVES: Our objective is to report a case of a third branchial pouch cyst and describe it as a pathologic entity. **STUDY DESIGN:** This is a case report and literature review. **METHODS:** We present a case report and review the literature on third branchial pouch anomalies. **RESULTS:** A 53 year old female patient was referred for evaluation of a left neck mass. She first noticed the mass several years ago and it had been aspirated and drained three years prior to our initial evaluation. Examination revealed a 4 cm mobile, firm, non-tender mass at the level of the hyoid bone anterior to the sternocleidomastoid. The mass recurred, however, prompting ultrasound and MRI scans which were significant for a complex cyst in the left neck. An FNA revealed cyst contents. The patient was taken the operating room where she underwent an uneventful excision of the neck mass. The final pathology revealed a normocellular parathyroid gland and thymic tissue. **CONCLUSIONS:** Branchial cleft anomalies involving the third pouch may present as cysts, sinuses, fistulas, and ectopic glands. They are relatively rare, and they respond well to surgical removal. We report a case of a third pharyngeal pouch cyst presenting as a lateral neck without any antecedent history of drainage.

7. An Unusual Case of Polymorphous Low-Grade Adenocarcinoma Presenting as a Sinonasal Mass

Daniel D. Charous, MD, Philadelphia, PA
William M. Keane, MD*, Philadelphia, PA
Mary F. Cunnane, MD, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand polymorphous low-grade adenocarcinoma as a distinct clinical and pathological entity and understand that its presentation may be variable.

OBJECTIVES: Our objective is to report an unusual case of polymorphous low-grade adenocarcinoma (PLGA) and describe it as a pathologic entity and its management. **STUDY DESIGN:** Case report and literature review. **METHODS:** We present a case report and review the literature of PLGA. **RESULTS:** An 85 year old male patient presented with a large mass filling the entire nasal cavity and left maxillary sinus. The patient underwent tumor debulking in the operating room for palliation. The patient had prior excision of a palatal mass eight years before, which was originally signed out as pleomorphic adenoma. The diagnosis of PLGA in the original specimen was made only retrospectively upon review. PLGA is a distinct entity that usually affects the minor salivary glands. The tumor is fairly common and generally has a benign clinical course, but sometimes acts more aggressively. PLGA usually affects the palate, but has been reported in the base of tongue, upper lip, buccal mucosa, tonsil, and retromolar pad. The tumors respond well to complete surgical removal. Recurrences are infrequent, as are metastases, which are generally to lymph nodes. Positive nodes may be managed surgically as well, with or without adjunctive radiotherapy. The prognosis is quite good, explaining the nomenclature as "low grade". **CONCLUSIONS:** PLGA is a malignant neoplasm which tends to follow a benign clinical course. We report a case of recurrent PLGA to the paranasal which presented as a large mass, almost completely replacing the left midface. To our knowledge, this is the first reported case of recurrent PLGA to the paranasal sinuses.

8. A Novel Technique Using Multiple Flaps for Multiple Subunit Nasal Defect Reconstruction

Raffi Dersarkissian, MD, Boston, MA
Scharukh Jalisi, MD, Boston, MA (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate applicability of multiple flaps in multiple subunit nasal defect reconstruction.

OBJECTIVES: The paramedian forehead flap is considered among the best donor flaps for nasal reconstruction based on similarity in texture and color to nasal skin, and availability of an adequate volume of tissue for large nasal defects. The benefits of melolabial flaps for nasal alar defects are well known. In patients with relative contraindications to extended paramedian forehead flaps (smokers, young patients with limited forehead laxity, patients with a low hairline, patients with small vessel disease/poor flap vascularity), we have found the use of a paramedian forehead flap for dorsum and tip reconstruction and a melolabial flap for the alar subunit to be advantageous. We present our experience with two patients who had multiple subunit deficits of the nose; nasal dorsum, ala and tip, who had contraindication to use of a single forehead flap. Concomitant use of two separate flaps for such multi-unit reconstruction of the nose, in this subset of patients, has yielded more predictable and cosmetically acceptable results. **STUDY DESIGN:** Case report. **METHODS:** Concomitant Paramedian Forehead Flap and melolabial flap applied to multiple subunit nasal defect. **RESULTS:** Reliable flap viability using this technique with excellent cosmesis. **CONCLUSIONS:** Multiple flap reconstruction should be considered in patients with multiple subunit nasal defects. Application of this technique results in more consistently reproducible results, particularly in patients with relative contraindications to extended single flap reconstruction.

9. Multiple Midline and Non-Midline Nasal Dermoid Cysts With Intracranial Extension in a Two-Year Old Child: Case Report and Discussion

Kapil R. Desai, BA, Newark, NJ
Huma A. Quraishi, MD, Newark, NJ
Peter W. Carmel, MD, Newark, NJ
Soly Baredes, MD*, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the presentation, assessment and management of nasal dermoid cysts of the nose.

OBJECTIVES: Nasal dermoid cysts are the most common congenital midline lesion of the nose, accounting for 3.7 to 6.6% of all head and neck dermal cysts. Their clinical importance lies in their potential for intracranial extension and subsequent complications. They usually present as a solitary midline mass anywhere along the dorsum from the tip to the glabella. Our objective is to present a patient with an unusual presentation of multiple midline as well as non-midline nasal dermoid cysts with intracranial extension. Our case was further complicated by chronic infection, cyst rupture and the development of bilateral draining cutaneous fistulae and granulomas. **STUDY DESIGN:** Case report and literature review. **METHODS:** Retrospective case report with review of literature. **RESULTS:** A 2-year-old patient presented with recurrent nasal abscesses and persistent bilateral draining cutaneous fistulae with granulomas in close proximity to the medial canthi. CT and MRI findings were consistent with nasal dermoid cysts with intracranial extension. Complete surgical excision of the cyst was attempted via frontal craniotomy with nasal dorsal excision of involved skin and cartilage. Intraoperative findings included extensive granulation tissue over the nasal dorsum, erosion of the nasal bone, and a hair bearing tract extending from the upper lateral cartilages to the dura. **CONCLUSIONS:** Early diagnosis of nasal dermoid cysts is essential to avoid complications of skeletal deformity, cyst rupture, and infection within intracranial and intraorbital spaces. Recognizing variable presentations, such as the multiple midline and non-midline occurrences in our patient, can aid in earlier diagnosis and prevention of complications such as cyst rupture and fistula formation.

10. Nasal Polyposis Secondary to Rhinolithiasis: Case of the Missing Eraser Head

Michael K. Ditkoff, MD, Manhasset, NY
Luna D. Bailey, MD, New York, NY (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the most common symptoms and radiographic findings associated with rhinolith formation. The pathophysiology of rhinolith formation will also be discussed.

OBJECTIVES: Rhinoliths are rare calcified concretions found in the nose. They are precipitated by endogenous sources such as blood, teeth, bony or cartilaginous fragments as well as exogenous sources such as foreign bodies. The most common symptom is unilateral purulent rhinorrhea. Rhinoliths should be quite common in the pediatric population notorious for foreign body insertion, however they remain rare in this age group. We present the case of a 7 year old boy who had chronic bilateral rhinorrhea for five years. The patient had been repeatedly treated for allergic rhinitis and bacterial sinusitis by multiple pediatricians. On consultation, he was initially found to have right sided nasal polyps and a computed tomography (CT) scan demonstrated a calcified mass in the right nasal passage. Endoscopic removal of the mass was performed and underlying the polypoid growth, a pencil eraserhead was identified. After notifying the parents of the finding, they reported that the child had placed a pencil into his nose at the age of 2. His uncle, who witnessed the event, had reportedly removed the entire foreign body. After surgical removal of the rhinolith, his symptoms resolved without further medical treatment. This case and a review of the literature as well as radiologic and intraoperative findings are included. **STUDY DESIGN:** Case report. **METHODS:** Case report. **RESULTS:** Case report. **CONCLUSIONS:** Case report.

11. Facial Nerve Paralysis Following Cochlear Implant Surgery

Jose N. Fayad, MD, New York, NY
Georges B. Wanna, MD, New York, NY
Jennifer N. Micheletto, MD, New York, NY
Simon C. Parisier, MD*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to know the incidence of facial nerve paralysis after cochlear implant surgery and understand possible mechanisms of injury.

OBJECTIVES: Facial nerve paralysis is a rare but devastating complication of cochlear implant surgery. The aim of the study was to define the incidence of facial nerve paralysis in our series and understand possible mechanisms of injury. **STUDY DESIGN:** Retrospective analysis of 700 consecutively implanted patients between 1980 and 2001 at our cochlear implant center. **METHODS:** Clinical charts and operative reports of patients with postoperative facial nerve weakness were reviewed. Onset, degree, and timing of paralysis were noted; clinical findings were correlated to operative report findings. The method of treatment was noted. The final outcome of the facial nerve function was recorded. **RESULTS:** 5 patients (one child and four adults) for an incidence of (0.70%) had a delayed facial nerve paralysis. This complication occurred as early as 18 hours, and as late as 19 days postoperatively. All patients were treated with steroids or steroids combined with antivirals. All patients recovered a normal face ultimately. **CONCLUSIONS:** In our series, the incidence of facial nerve paralysis following cochlear implant surgery is (0.70%). Although rare, this complication is devastating for both the patient and the surgeon. Different mechanisms of injury are suspected, i.e. heating injury versus viral reactivation, based on the timing of onset. All our patients presented with a delayed facial nerve paralysis and did recover a normal facial nerve function.

12. Preliminary Results With the Use of Alloderm in Chronic Otitis Media

Jose N. Fayad, MD, New York, NY
Simon C. Parisier, MD*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the indications and the results of Alloderm, preserved allograft with an acellular dermal matrix, in the reconstruction of the tympanic membrane.

OBJECTIVES: Alloderm, an acellular dermal graft, has been used successfully as a material for soft tissue implantation. The aim of this presentation is to report our experience with the use of Alloderm in the reconstruction of the tympanic membrane. **STUDY DESIGN:** Case review study. **METHODS:** Charts of patients who underwent tympanoplasty with and without mastoidectomy, in which Alloderm was used as a grafting material, were reviewed. Success was defined as closure of the tympanic membrane perforation. **RESULTS:** Alloderm was used as a grafting material in 18 patients. Thirteen patients had simple perforations, eight of them had a previous tympanoplasty that failed. Five patients had chronic otitis media with cholesteatoma, all of them had unsuccessful previous surgery for cholesteatoma. The take rate for Alloderm was 89% in this group of patients. Another patient (5.5%) developed serous otitis media and needed a myringotomy tube in the post-operative period. **CONCLUSIONS:** The take rate for Alloderm in tympanoplasty is similar to that of temporalis fascia in our hands. Alloderm can provide a suitable grafting material when fascia is not available or when the size of the defect precludes the use of fascia.

13. Spontaneous Pediatric CSF Otorrhea

Richard E. Ferraro, MD, Hershey, PA
Jon E. Isaacson, MD, Hershey, PA
John M. Schweinfurth, MD, Hershey, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate an understanding of the etiology of spontaneous pediatric CSF otorrhea, explain the common presenting symptoms and otologic challenge presented to the surgeon, and discuss and compare treatment modalities and outcomes.

OBJECTIVES: To discuss the etiology of spontaneous pediatric CSF leaks resulting in CSF otorrhea. To present a case of a patient presenting with spontaneous CSF otorrhea and recurrent meningitis and to discuss surgical management and outcomes. **STUDY DESIGN:** Case report and review of English literature. **METHODS:** Retrospective chart review of a single patient presenting with recurrent meningitis and spontaneous otorrhea, with a review of English literature. **RESULTS:** Surgical repair of spontaneous CSF otorrhea without recurrence of meningitis. **CONCLUSIONS:** Spontaneous pediatric CSF otorrhea without sensorineural hearing loss is rare and the management presents an otologic challenge.

14. Muir-Torre Syndrome: Report of a Patient With Preauricular and Parotid Masses and a History of Multiple Distinct Malignancies

Jonathan D. Forman, MD, Newark, NJ
Soly Baredes, MD*, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the features of Muir-Torre syndrome, including its basic genetics. The participants should also gain an understanding of the clinical and familial implications of this diagnosis.

OBJECTIVES: To familiarize the head and neck surgeon with Muir-Torre syndrome, a rare autosomal dominant genodermatosis that primarily presents with sebaceous tumors and visceral malignancies. **STUDY DESIGN:** Case report. **METHODS:** We review the presentation of a 71-year-old man with a history of non-Hodgkin's lymphoma and prostate cancer who was diagnosed with a preauricular sebaceous carcinoma with intraparotid metastasis. A discussion of Muir-Torre syndrome is included with a review of the literature. **RESULTS:** Muir-Torre syndrome is an important consideration whenever a diagnosis of sebaceous tumor is made. A majority of these sebaceous tumors will present within the head and neck. Patients should have regular screening exams, and the physician should have a high index of suspicion for a variety of cancers. Patient's family should also be counseled and screened accordingly. **CONCLUSIONS:** Although rare, Muir-Torre is an important syndrome of which the head and neck surgeon should be aware. Diagnosis of this entity has important implications for the patient and his family.

15. The Use of a Covered Wall Stent in the Treatment of Common Carotid Blowout

Jonathan D. Forman, MD, Newark, NJ
Mark H. Tabor, MD, Newark, NJ
Jeffrey Farkas, MD, Newark, NJ
Soly Baredes, MD*, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the utility of the covered wall stent in the treatment of carotid artery bleeding.

OBJECTIVES: To present the use of a covered wall stent in the treatment of head and neck tumor-related carotid blowout. **STUDY DESIGN:** Case report and literature review. **METHODS:** We describe a 38 year old man with a residual laryngeal neoplasm, despite near completion of definitive chemotherapy and radiation therapy, who presented with common carotid bleeding. The patient was evaluated using computed tomographic angiography. Under fluoroscopic guidance, the patient had a covered wall stent placed bypassing a common carotid pseudoaneurysm. **RESULTS:** The covered wall stent successfully managed the common carotid blowout bleeding. **CONCLUSIONS:** Covered wall stents can be useful in the treatment of a variety of vascular pathologies, including selected cases of carotid blowout. Further investigation is needed to fully define their utility in carotid bleeding associated with head and neck cancer.

16. A Double Blind Study to Evaluate the Efficacy of the Diapulse® High Frequency Pulsed Electromagnetic Energy in the Treatment of Chronic Tinnitus

Soha N. Ghossaini, MD, New York, NY
Jaclyn B. Spitzer, PhD, New York, NY
Cynthia C. Mackins, MS, CCC-A/FAAA, New York, NY
Anne Zschommler, BA, New York, NY
Jack J. Wazen, MD, FACS*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the effect of high frequency pulsed electromagnetic energy in the treatment of chronic tinnitus.

OBJECTIVES: Electromagnetic therapy has been used in a multiple of clinical settings including the treatment of seizure disorders, brain edema, migraine headaches, revascularization of burn wounds and diabetic ulcers with reported success. The purpose of our study is to investigate the use of pulsed high frequency electromagnetic therapy on tinnitus. **STUDY DESIGN:** This is a randomized prospective double blind placebo controlled study to evaluate the effectiveness of high frequency pulsed electromagnetic energy using the Diapulse® machine in the treatment of chronic tinnitus. Thirty seven (37) adult patients with chronic tinnitus for at least 6 months were recruited and randomly divided into an active and a placebo group. **METHODS:** Patients received 30 minutes treatments with the Diapulse® device three times a week for 1 month. The machine was set to deliver electromagnetic energy at a frequency of 27.12 MHZ at a repetition rate of 600 pulses per second All subjects had pre and post treatment audiological testing, and tinnitus frequency and intensity matching. They answered a Tinnitus Rating Questionnaire (TRQ) and the Tinnitus Handicap Inventory (THI) before and after treatment. **RESULTS:** There was no significant change in the pre and post treatment audiometric thresholds of all subjects in either group. No statistically significant differences were found between the pre and post treatment handicap scores or the tinnitus rating scores in either subject group (Student t-test). No diagnosis specific differences were identified. **CONCLUSIONS:** High frequency pulsed electromagnetic energy (Diapulse®) at the settings used in this study showed no role in the therapy of patients with chronic tinnitus.

17. Spontaneous Pneumomediastinum: A Rare Complication of Ecstasy Use

Satish Govindaraj, MD, New York, NY
Adam Pearl, MD, New York, NY
Juan F. Moscoso, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to diagnose, understand the pathophysiology, and treat spon-

taneous pneumomediastinum secondary to ecstasy use.

OBJECTIVES: To diagnose and treat spontaneous pneumomediastinum, a rare complication of ecstasy use, and to propose a diagnostic algorithm for the evaluation of this entity in order to avoid unnecessary surgical intervention. **STUDY DESIGN:** Case study. **METHODS:** A case of spontaneous pneumomediastinum following the ingestion of ecstasy is presented with emphasis on the pathophysiology of this condition. A review of the literature and our experience with this patient has aided in the creation of an algorithm for the future management of these patients. **RESULTS:** Ecstasy use can cause injury to the bronchopulmonary tree and subsequent pneumomediastinum. Operative exploration can be avoided in select cases as described and displayed in a diagnostic/therapeutic algorithm. **CONCLUSIONS:** Spontaneous pneumomediastinum is a rare complication of ecstasy use that requires adequate investigation and observation to confirm that this entity follows a benign course and that unnecessary surgical intervention is avoided.

18. Endoscopic Craniofacial Resection for Intracranial Polyposis

Gady N. Har-El, MD*, Brooklyn, NY
Roxanne N. Todor, MD, Brooklyn, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the indications for and demonstrate the surgical technique of the combined neurosurgical-transnasal endoscopic technique for massive sinonasal polyposis with intracranial extension.

OBJECTIVES: Massive sinonasal polyposis with skull base dehiscence is a difficult disease to treat. Conventional transnasal or transfacial techniques may result in dural injury, CSF leak and infection. We describe our experience with combined neurosurgical-endoscopic technique which provides protection of the meninges. **STUDY DESIGN:** Retrospective review of 5 cases with massive sinonasal polyposis extending intracranially through skull base dehiscence. **METHODS:** Frontal craniotomy through bicoronal approach is performed first. The dura is carefully separated from the infectious process at the floor of the anterior cranial fossa. The frontal lobe with the intact meninges is elevated off the anterior cranial floor. A sheet of blue plastic material is inserted under the frontal lobe from the craniotomy site to the planum sphenoidale. Next, transnasal endoscopic ethmoidectomy, sphenoidectomy and frontal sinusotomy are performed with removal of all inflammatory processes. The blue plastic material is seen through any existing or potential skull base dehiscence, thus providing visual protection for the dura and brain. **RESULTS:** Endoscopic craniofacial resection was performed on 5 patients. Removal of all gross disease from the frontal, ethmoid and sphenoid skull base regions was achieved without dural injury. We did not encounter CSF leak or meningitis in any of the 5 patients. **CONCLUSIONS:** The endoscopic craniofacial approach with the "Blue Sky" protection technique provides a safe method of complete removal of massive skull base polyposis with intracranial extension.

19. Chorda Tympani Neuroma Masquerading as Cholesteatoma

Claire L. Hopkins, MB, FRCS, Brighton, Sussex UK
Ha Chau, MB, FRCS, Brighton, Sussex UK
J. Anthony McGilligan, MB, FRCS, Brighton, Sussex UK

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to recognize a chorda tympani neuroma and understand its management.

OBJECTIVES: Facial nerve neuromas occur throughout the course of the nerve and its branches. However neuromas of the chorda tympani are exceptionally rare. We present the first case reported in England and discuss the management. As with any rarity the diagnosis can only be made with a high index of suspicion, and preoperatively the lesion was thought to be a keratin pearl. **STUDY DESIGN:** The case notes were reviewed and a literature search was performed. **METHODS:** N/A. **RESULTS:** The 53 year patient presented with a history of vertigo and conductive hearing loss. A mass was seen behind the postero-superior quadrant of the tympanic membrane, resembling a keratin pearl. CT demonstrated a middle ear mass extending into the attic, thought to be a cholesteatoma. At surgery the mass was found to be contiguous with the chorda and resected in continuity with the nerve. Post-operatively the patient developed a metallic taste which resolved completely. **CONCLUSIONS:** Neuromas of the facial nerve are discussed. The relatively low incidence of dysgeusia following chorda tympani and possible mechanisms of compensation are presented. Total resection is the treatment of choice for these lesions. High resolution CT imaging is likely to facilitate early diagnosis and complete excision.

20. Non-Dentally Related Isolated Chronic Maxillary Sinus Opacification Does Not Correlate With Ipsilateral Intranasal Structural Abnormalities

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

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the role ipsilateral intranasal structural abnormalities play in cases of non-dentally related isolated chronic maxillary sinus opacification.

OBJECTIVES: The purpose of this study is to determine the correlation of ipsilateral intranasal structural abnormalities with non-dentally related isolated chronic maxillary sinus opacification. **STUDY DESIGN:** Retrospective case series of 35 patients with chronic isolated maxillary sinus opacification not attributable to dental pathology. **METHODS:** The records of 35 patients with chronic isolated maxillary sinus opacification not attributable to dental pathology were reviewed for CAT-scan and intraoperative findings. The correlation of ipsilateral intranasal structural abnormalities, including paradoxical middle turbinates, conchae bullosa, haller cells and septal deviations, was determined. **RESULTS:** There was no correlation of intranasal structural abnormalities with the cases isolated chronic maxillary sinus opacification. Nineteen of 35 patients did have ipsilateral predisposing factors, but 12 of 35 patients did not. **CONCLUSIONS:** Ipsilateral intranasal structural abnormalities, including paradoxical middle turbinates, conchae bullosa, septal deviations and haller cells, did not correlate with isolated chronic maxillary sinus opacification that was not attributable to dental pathology.

21. Same-Day Discharge for Selected Patients Undergoing Combined Nasal and Palatal Surgery for Obstructive Sleep Apnea

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

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand that same-day discharge after combined nasal and palatal surgery for obstructive sleep apnea is safe in selected cases. They should be able to describe the criteria for discharging patients who have had such surgery and discuss the advantages of this approach.

OBJECTIVES: To determine the safety of same-day discharge for patients undergoing combined nasal and palatal surgery and to develop criteria by which the discharge can be considered safe. **STUDY DESIGN:** Retrospective review of 23 cases in which patients underwent combined nasal and palatal surgery for obstructive sleep apnea and were safely discharged to home the same day. **METHODS:** Patients with obstructive sleep apnea who underwent combined nasal and palatal surgery were considered for same-day discharge if they fulfilled the following postoperative criteria: O2 saturation while asleep of greater or equal

to 94% on room air, no history of coronary artery disease, COPD or active diabetes mellitus, adequate oral analgesia and oral intake, hemostasis, and normal vital signs. To provide for adequate nasal airflow in the early postoperative period, nasal septal splints with air channels were placed during surgery and removed at one week postoperatively. **RESULTS:** Five females and 18 males fulfilled the criteria and were successfully discharged. The average age of the patients was 45.9 years old. The average respiratory disturbance index (RDI) was 36. The average body mass index (BMI) was 49.9. **CONCLUSIONS:** Same-day discharge is safe in selected cases for some patients who have undergone combined nasal and palatal surgery for obstructive sleep apnea.

22. Revision Stapes Surgery—The Malleus to Oval Window Wire-Piston Technique

Darius Kohan, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the effectiveness of various revision stapes procedures versus the malleus to oval window wire-piston technique.

OBJECTIVES: To determine the effectiveness of the malleus to oval window wire-piston revision stapes surgery technique. **STUDY DESIGN:** A retrospective analysis of 170 stapes procedures performed over a nine year period identified 15 revisions. Five patients required a malleus to oval window wire-piston technique. All patients were followed for at least six months. The surgical outcome including audiologic data and complications were noted. **METHODS:** Stapes surgery was performed via a transcanal approach, with monitored sedation and local anesthesia, on an ambulatory basis, by the same surgeon utilizing the laser technique and a stapes wire-piston prosthesis. **RESULTS:** Among revision stapes procedures there was no significant difference in the air-bone gap closure or complication rate between the incus to oval window and the malleus to oval window techniques. The average preoperative air-bone gap was 30db, while the mean postoperative gap was 9.5db. **CONCLUSIONS:** In experienced hands revision stapes surgery utilizing the malleus to oval window stapes wire-piston technique is safe and effective.

23. Charcot-Marie-Tooth Syndrome With Hearing Loss: Case Report and Review of the Literature

Jed A. Kwartler, MD, Springfield, NJ

Grace Leu, BA, Newark, NJ (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) discuss the auditory manifestations of Charcot-Marie-Tooth Syndrome (CMT), and 2) utilize this information in the clinical management of CMT patients.

OBJECTIVES: Charcot-Marie-Tooth Syndrome (CMT) is a heterogeneous group of polyneuropathies, causing both motor and sensory dysfunction. Hearing loss could be one of the complications of this disease, as illustrated by the case described in this report. Recent findings concerning CMT appear more often in the literature of other medical disciplines, such as neurology and genetics. We have incorporated relevant information on CMT that is not readily available to the practicing otolaryngologist into this report. Our goal is to aid the reader to have a basic understanding of CMT, as it pertains to otolaryngology. **STUDY DESIGN:** Case report and literature review. **METHODS:** The subject received comprehensive audiometry to assess hearing. **RESULTS:** The subject had an abnormal audiogram consistent with sensorineural hearing loss. **CONCLUSIONS:** The sensorineural hearing loss of this patient is most likely due to CMT. Besides hearing loss, review of the literature has also shown an association between CMT and auditory neuropathy. CMT is a very complex disease with heterogeneous manifestations that include sensorineural hearing loss and auditory neuropathy.

24. Electronic Medical Records: Cost and Time Utility Analysis

Jed A. Kwartler, MD, Springfield, NJ

Avrim R. Eden, MD*, Springfield, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) demonstrate an understanding of both the advantages and disadvantages of EMR systems, and 2) recognize both the time and cost utility of an EMR.

OBJECTIVES: Electronic medical records (EMR) are purported to offer many distinct advantages over conventional paper medical records. Among these are: 1) more complete documentation, 2) searchable database of symptoms, physical exam findings, tests, and treatments, 3) searchable database of drug interactions, and 4) improved office workflow with more timely communication with other health care providers. At the same time several factors have worked against more widespread adoption of EMR including initial software and hardware costs and resistance to changing practice habits. We will review the implementation of an EMR in an otologic/neurotologic practice. In particular, we will discuss the cost and time utility of the EMR and also highlight areas where EMR still falls short. **STUDY DESIGN:** Case report and literature review. **METHODS:** Review of EMR implementation process, cost and time utility analysis of EMR. **RESULTS:** EMR was effective in improving office workflow and did show cost savings over time. **CONCLUSIONS:** EMR does offer advantages over current paper methods of charting. Despite some limitations which will be overcome with advancing storage, imaging and networking technology EMR should be considered a useful tool worth investing in.

25. Branchio-Oculo-Facial Syndrome

Deidre Larrier, MD, Boston, MA

Rahul K. Shah, MD, Boston, MA

Donald J. Annino, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss a rare congenital syndrome of branchial cleft malformation in the context of normal embryologic development.

OBJECTIVES: To present and discuss a rare congenital syndrome of branchial cleft malformation in the context of normal embryologic development. **STUDY DESIGN:** Branchio-oculo-facial syndrome is an autosomal dominant disorder characterized by branchial sinus defects with concomitant skin, craniofacial, auricular, ophthalmologic, and oral anomalies. **METHODS:** A case report of a child born at our institution is presented. A multi-disciplinary team characterized this child's manifestations as branchio-oculo-facial syndrome. **RESULTS:** A male was born at 36 weeks gestation with the findings of bilateral coloboma, bilateral cleft lip, malformed and inferiorly displaced auricles, infra-auricular and supra-auricular skin defects with pits in the defects, and syndactyl of the toes bilaterally. There was a stenotic external canal on the right. Work-up included normal chromosomes, normal thyroid ultrasound, sinus fistulogram demonstrating no connections, and a negative temporal bone CT except for pinna deformities bilaterally. A multicystic dysplastic kidney was found on the right. No cardiac defects were identified. He continues to have serous drainage from the mucosal patches overlying the cervical sinuses. **CONCLUSIONS:** We present a male born with multiple congenital abnormalities characterized as having the branchio-oculo-facial syndrome. A Medline search from 1966 to 2002 documents significantly fewer than 100 cases of this syndrome. A multi-disciplinary team approach is utilized to manage this complex patient. The otolaryngologist is consulted upon to assist in the management of the branchial sinus and skin defects, which can include thymic tissue remnants.

26. Histologic Findings of Tonsillar Tissue Treated With Radio-Frequency

Steven B. Levine, MD, Trumbull, CT

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) appreciate the potential clinical value of radio-frequency volume tissue reduction of tonsillar tissue, and 2) understand the histologic effect that such application has to lymphoid stroma.

OBJECTIVES: Volume reduction of tonsillar tissue by applying radio-frequency energy into the stroma of the tonsils has been proposed as a safe alternative to traditional excisional techniques for treatment of tonsillar hypertrophy. Previous reports demonstrated that the procedure was nearly pain-free, amenable to an office setting under local anesthesia, with excellent results after one year of follow-up. These reports emphasized the importance of control of the temperature of the treated tissue. This study reports findings whereby a subject was treated with radio-frequency energy without temperature control and experienced objective improvement in airway size. The patient subsequently underwent tonsillectomy providing the opportunity to histologically study the effects that radio-frequency energy has on lymphoid stroma. **STUDY DESIGN:** Case report with histologic examination of the treated tissues. **METHODS:** Case report with histologic examination of the treated tissues. **RESULTS:** In this case, radio-frequency volume tissue reduction of the tonsils was successfully achieved without pain or sequelae, and without monitoring tissue temperature. The subsequently excised tonsils were histologically examined and described. **CONCLUSIONS:** These findings support the next phase in a clinical trial treating young children with adeno tonsillar hypertrophy with radio-frequency volume tissue reduction of the tonsils.

27. Benign Metastatic Pleomorphic Adenoma

Jonathan D. Lipana, BS, Boston, MA
Elie E. Rebeiz, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the incidence of metastatic events from a benign pleomorphic adenoma originating in the salivary glands. In addition, participants should be able to discuss current hypotheses presented in the literature regarding these metastases.

OBJECTIVES: Pleomorphic adenomas are the most common tumors of the parotid gland. It is generally accepted that these tumors are benign in nature. However, there exists a small subset of these tumors that inexplicably metastasize, usually following local recurrences of the disease. Bone and lung are the most common reported sites for metastasis. We report a case of a benign pleomorphic adenoma with cervical and lumbar vertebral body metastases. The literature concerning benign metastasizing pleomorphic adenomas is reviewed. **STUDY DESIGN:** This is a case report of a metastatic pleomorphic adenoma with benign histology. The literature regarding previous reports of similar events was reviewed. **METHODS:** Literature searches were performed using Ovid Medline. **RESULTS:** 25 case reports of benign metastasizing pleomorphic adenomas were found in the literature. There were 15 females and 10 males with an age range of 12 to 73 years at initial presentation. Local recurrences preceded the metastases in all but 4 of the cases. The range of time to metastasis was 2 to 39 years. Bone was the most common site for metastasis followed by lung. **CONCLUSIONS:** Although uncommon, reports of benign metastatic pleomorphic adenomas are documented in the literature. These metastases show a predilection for bone as demonstrated in our case. There are no current methods of predicting which of these benign tumors will metastasize in the future. Metastatic disease should be considered in any patient with a history of pleomorphic adenoma presenting with a new mass.

28. Extracapsular Dissection With Facial Nerve Monitoring, Rethinking the Traditional Operation for Parotidectomy

Lee Ann McLaughlin, MD, New York, NY
Arnold Komisar, MD, DDS*, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the traditional rationale for surgical management of tumors of the lateral lobe of the parotid gland with superficial parotidectomy and compare it to the rationale for extracapsular dissection with facial nerve monitoring; understand the benefits of extracapsular dissection; understand the technique of extracapsular dissection; appreciate that extracapsular dissection with facial nerve monitoring is a technically feasible, oncologically safe method of management of lateral lobe parotid gland tumors which adequately prevents facial nerve morbidity.

OBJECTIVES: To demonstrate that extracapsular dissection of lateral lobe parotid tumors is a technically feasible, oncologically safe method of management of lateral parotid lobe tumors which adequately prevents facial nerve morbidity. **STUDY DESIGN:** Retrospective chart review. **METHODS:** The traditional rationale for superficial parotidectomy for management of lateral lobe parotid gland tumors and the relevant historical literature were reviewed. Preliminary surgical outcomes of eight patients with lateral parotid lobe tumors who underwent extracapsular dissection with facial nerve monitoring were examined. **RESULTS:** Eight patients underwent extracapsular excision for management of their lateral parotid gland tumors without complication. There were no instances of Frey's Syndrome, facial nerve palsy, inferior auricle numbness, seroma or infection. **CONCLUSIONS:** The traditional rationale of superficial parotidectomy for management of tumors of the lateral lobe of the parotid gland has included the need for a margin, facial nerve protection and lower incidence of tumor recurrence. The facial nerve is protected by means of facial nerve dissection. As such superficial parotidectomy has remained the standard of care for management of lateral parotid lobe tumors for 30 years. Nevertheless, there is significant morbidity associated with superficial parotidectomy including: facial nerve weakness, Frey's Syndrome and cosmetic deformity. Extracapsular dissection with facial nerve monitoring and greater auricular nerve preservation is a technically feasible, oncologically safe approach to the management of lateral lobe parotid gland tumors which in our experience adequately prevents facial nerve morbidity.

29. Office-Based Closed Reduction of Nasal Fractures With Sequential Topical Anesthesia

Philip J. Miller, MD, New York, NY
Garrett H. Bennett, MD, New York, NY (Presenter)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to perform a step-by-step office-based procedure for closed reduction of nasal fractures which is extremely well tolerated by patients.

OBJECTIVES: Nasal bones are the most common fractures of the face. Closed reduction of nasal fractures has been shown to be both safe and effective. The revision rates using either local or general anesthesia are similar with the additional expense, time and risk of general anesthesia frequently avoidable. We describe a step-by-step office-based procedure for closed reduction of nasal fractures which has been extremely well tolerated by patients. **STUDY DESIGN:** Retrospective chart review. **METHODS:** Patients were treated within 1 to 10 days of nasal fracture. Cotton pledgets saturated with 4% cocaine were bilaterally advanced along the undersurface of the osseocartilaginous vault. Every minute, the pledgets were repositioned more dorsally and cephalically along the nasal bones and upper lateral cartilages until the nose was completely decongested and anesthetized. The undersurface of the mid and upper vault can be visually inspected with a 30-degree 2.4mm endoscope. The nasal fracture was reduced using digital manipulation and Asch or Walsh forceps. The nose was taped and an Aquaplast nasal splint and bacitracin coated Telfa nasal packing placed. **RESULTS:** Sixteen patients underwent nasal fracture closed reduction under this form of sequential topical anesthesia. One reduction was performed in the operating room and 2 patients returned for an additional open reduction. There were no complications and all patients tolerated the procedure well. **CONCLUSIONS:** Closed reduction of nasal fractures has been shown to be safe, effective and well tolerated by patients. The method described here is an office-based procedure requiring approximately 15 minutes and providing excellent anesthetic

sia, patient comfort and nasal fracture reduction.

30. Lesser Palatine Nerve Block (LPN) Technique for Peritonsillar Abscess Drainage

William A. Numa, MD, Boston, MA
Tulio A. Valdez, MD, Boston, MA
Nikolas H. Blevins, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the differences between the Lesser Palatine Nerve (LPN) and the Greater Palatine Nerve (GPN), as well as their contributions to the innervation to the soft palate. The participants should be able to demonstrate and explain to peers and healthcare professionals the technique of LPN block to provide profound anesthesia to the soft palate, its advantages over non-regional infiltration of local anesthetics, and alert peers on the potential pitfalls of LPN block as well as how to avoid them.

OBJECTIVES: 1) Explain the differences between the LPN and the GPN and discuss the anatomic structures surrounding and separating them, 2) overview of the technique of LPN block, 3) explain the differences between the LPN and the GPN block, and 4) discuss the importance of the LPN block in anesthesia to the soft palate. Otolaryngologists, ER Physicians, and General Practitioners are often faced with diagnosing and treating peritonsillar abscesses by open drainage. Oftentimes infiltrating local anesthetics can result in suboptimal and inconsistent anesthesia around the puncture and/or incision site. There are several reasons why local (non-regional) infiltration of anesthesia fail to provide adequate anesthesia during the drainage procedure. These include failure to locally infiltrate all necessary areas, soft tissue edema causing inconsistent landmarks, and failure of anesthetics due to the acidic environment which surrounds most peritonsillar abscesses. A simple, easily achievable nerve block to the Lesser Palatine Nerve (LPN) can provide robust anesthesia to the soft palate. This technique is described in an effort to satisfy the need for adequate pain control during the incision and drainage of peritonsillar abscess. The innervation of the palate has been studied in detail. The Lesser Palatine Nerve (LPN) and the Greater Palatine Nerve (GPN) contribute important afferent innervation of the soft palate. Anatomic structures separating the LPN and GPN underscore the importance of addressing these nerves as separate bundles, as they provide noncompeting sensory afferent information from the soft palate. Reliable anatomic landmarks provide consistent access to the LPN. Infiltrating a local anesthetic to block the LPN as it exits the Lesser Palatine Foramen results in profound anesthesia to the soft palate for subsequent treatment. **STUDY DESIGN:** Description of technique. Anatomical specimen examination. **METHODS:** Anatomic dissections in situ of the hard and soft palate. Literature review of the Anatomy and Regional Anesthesia of the Head and Neck. Discuss in vivo LPN block. **RESULTS:** The LPN and GPN lie in close anatomical relation to one another yet are separated by distinct anatomical structures. **CONCLUSIONS:** Anatomical structures separating the LPN and GPN underscore the importance of addressing these as separate nerve bundles, as they provide non-competing sensory afferent information from the palate. Several anatomical landmarks can be used as guidance to access the LPN. Dedicated trials aimed at evaluating clinical usefulness of this block as a solution or adjunct in pain management of the pre-, trans-, and post-operative anesthesia of the soft palate will be valuable.

31. Posterior Fossa Arachnoid Cysts Can Mimic Meniere's Disease

Robert C. O'Reilly, MD, Wilmington, DE
Erin K. Hallinan, BS, Philadelphia, PA (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to recognize the features of Meniere's disease and discuss the types of pathology which can present a picture of Meniere's disease.

OBJECTIVES: Describe an unusual neurotological presentation of arachnoid cysts. **STUDY DESIGN:** Case description and literature review. **METHODS:** Retrospective chart review. **RESULTS:** Arachnoid cysts constitute 1% of all intracranial space occupying lesions. In the posterior fossa they typically produce vague and nonspecific symptoms and are often felt to be incidental findings on imaging studies. However, a subset of these lesions can produce signs and symptoms indistinguishable from those of Meniere's disease. We discuss the clinical and laboratory features of two cases of posterior fossa arachnoid cysts mimicking Meniere's disease as well as the substantial resolution of symptoms in one patient after cysto peritoneal shunt. **CONCLUSIONS:** Posterior fossa arachnoid cyst must be considered in the differential diagnosis of patients presenting with signs and symptoms of Meniere's disease.

32. Transnasal Endoscopic Repair of Cerebrospinal Fluid (CSF) Rhinorrhea

Kasra Rastani, MD, PhD, Boston, MA
Elie E. Rebeiz, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to present transnasal endoscopic repair of cerebrospinal fluid (CSF) rhinorrhea as a viable option to the craniotomy method which has higher morbidity. Different packing material and techniques are presented.

OBJECTIVES: Cerebrospinal fluid (CSF) rhinorrhea may be traumatic, iatrogenic, or spontaneous. Traditionally, most cases were treated with transcranial surgical approach which was associated with considerable morbidity and mortality. Recently, however, transnasal endoscopic approach to the repair of CSF rhinorrhea has been gaining acceptance as a safe and effective alternative. The purpose of our study is to present the outcome of transnasal endoscopic method of repairing CSF rhinorrhea using different packing techniques. **STUDY DESIGN:** A retrospective study of seven patients who had undergone transnasal endoscopic repair of iatrogenic or spontaneous CSF rhinorrhea at our institution from 1995 to 2001 was conducted. **METHODS:** All patients who underwent transnasal repair of anterior cranial base CSF leak were included in our study. The records were reviewed (retrospectively) for the etiology of the CSF leak, site and size of the defect, method of diagnosis, technique of repair, the use of lumbar drains or shunts, and follow up duration and outcome. **RESULTS:** Five of the seven patients were male and two were female with ages ranging from 38 to 59. Two patients had idiopathic causes and five had iatrogenic causes for their leaks. The patients were followed up from a few months up to six years, during which six had no CSF leak (85%). One patient had persistent CSF rhinorrhea less than a month after the endoscopic approach requiring transcranial repair. **CONCLUSIONS:** We report a success rate of 85% for the transnasal endoscopic approach to the repair of CSF rhinorrhea which is comparable to the results reported by other investigators. This approach is a viable and less invasive alternative to the transcranial technique. Different packing methods will be presented.

33. A Case Study Illustrating the Importance of Clinical and Radiological Differentiation of Lipoblastoma from Lymphangioma

Arie Rosen, MD, Newark, NJ
Andrew R. Jedynak, MS, Newark, NJ
Don Respler, MD, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to 1) acknowledge the possible occurrence of Lipoblastoma in the neck of children, 2) make the differential diagnosis between Lipoblastoma and Lymphangioma, and 3) recognize the differences in treatment of Lipoblastoma versus Lymphangioma.

OBJECTIVES: To describe the characteristics clinical, imaging and pathological features of Lipoblastoma of the neck. To emphasize preoperative similarities and differentiation between Lipoblastoma and Lymphangioma. While treatment objective of complete excision is feasible for Lipoblastoma, it is usually not

possible for Lymphangioma without functional mutilation. **STUDY DESIGN:** Case study and literature review. **METHODS:** A 16 months boy with few weeks' history of enlarging posterior triangle soft neck mass. The mass occupied the majority of the neck from the occipute to the mandible and down to the clavicle. Preoperative diagnosis of cystic hygroma was supported by neck MRI and CT interpretation showing a large cystic, septated mass. During surgery the tumor was found to be very soft and frail with very thin capsule. It was enveloping but separable from nervous structures. The tumor was completely resected. **RESULTS:** Contradictory to the clinical and radiological impression, pathology revealed Lipoblastoma. The patient had transient weakness of the spinal accessory nerve with complete recovery at three months. **CONCLUSIONS:** Lipoblastoma is a rare benign fatty tumor/growth anomaly in the neck affecting primarily children under the age of 3Y. Clinical and radiological differentiation of this tumor from Lymphangioma is difficult but imperative; Lipoblastoma can readily be excised with no long term dysfunctional consequences while Lipoblastoma is often treated with sclerosing agents since complete excision can cause severe functional detriment.

34. Hemangioma of the Parapharyngeal Space

Arie Rosen, MD, Newark, NJ
Jose P. Zevallos, BS, Newark, NJ (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to acknowledge the possible occurrence of hemangiomas in the parapharyngeal space, and explain the preoperative workup for this type of tumor.

OBJECTIVES: There are only rare anecdotal reports of hemangiomas of the parapharyngeal space (PPS). This is a report of a cavernous hemangioma of the prestyloid PPS. The vascular nature of this tumor was not detected on preoperative CT scan or MRI. **STUDY DESIGN:** Case report and literature review. **METHODS:** A 52-year-old woman presented with a several month history of numbness of the cheek. Her CT scan and MRI revealed an ipsilateral PPS tumor. The characteristics of the lesion on MRI suggested that the tumor was of neurogenic origin and not a vascular tumor. It was excised completely via a trans-cervical approach. **RESULTS:** A 7 x 7 cm cavernous hemangioma was excised. It was well circumscribed and soft in consistency. No significant bleeding was encountered. The cheek numbness was partially resolved postoperatively. **CONCLUSIONS:** 1) PPS hemangiomas are extremely rare but should be considered in the differential diagnosis of PPS tumors, 2) PPS hemangiomas may be misinterpreted as nonvascular solid tumors on preoperative imaging, 3) the tumor was attached to the pterygoid muscle, possibly arising from that muscle; it was not related to any of the major vascular structures of the PPS, and 4) preoperative vascular studies or embolization were unnecessary.

35. Occult Papillary Carcinoma of the Thyroid Presenting as a Long-Standing Parapharyngeal Metastasis

Adam T. Ross, MD, Philadelphia, PA
Anna H. Grosz, AB, Philadelphia, PA
Patricia Livolsi, MD, Philadelphia, PA
Gregory S. Weinstein, MD*, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the pathophysiology of lymphatic spread of papillary thyroid carcinoma and entertain this rare entity in the differential of a parapharyngeal mass.

OBJECTIVES: Neoplasms of the parapharyngeal space are rare and are most commonly benign and of salivary origin. Parapharyngeal metastasis as the presenting sign of papillary thyroid carcinoma is extremely rare, with only five cases previously reported in the world literature. We describe a unique case of papillary thyroid carcinoma presenting as a parapharyngeal metastasis of 16 years duration with an occult primary tumor. **STUDY DESIGN:** Case report with a review of the literature. **METHODS:** N/A. **RESULTS:** At 52 year-old female was found to have a parapharyngeal mass on CT scan on a routine work-up for stapedectomy 16 years prior to presentation. She was followed with serial MRI until growth was noted, at which time she presented to our institution. Surgical resection was performed, which on final pathology was determined to be papillary thyroid carcinoma. Subsequent total thyroidectomy revealed a 0.4 cm follicular-variant papillary carcinoma in the right thyroid lobe. **CONCLUSIONS:** Although rare, papillary carcinoma must be considered in the work-up of a parapharyngeal mass.

36. Esthesioneuroblastoma from the Inferior Aspect of the Maxillary Sinus

Rahul K. Shah, MD, Boston, MA
Jagdish K. Dhingra, MD, Brookline, MA
Charles Ruhl, MD, Providence, RI
Peter Nigri, MD, Providence, RI

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to present an atypical manifestation of a rare neoplasm and to discuss the currently accepted staging systems, diagnosis, intervention, and controversies in the treatment of esthesioneuroblastoma.

OBJECTIVES: Esthesioneuroblastoma is a rare tumor of olfactory epithelial origin. Usually this tumor is diagnosed once the tumor has locally advanced to the paranasal sinuses or anterior cranial fossa. A unique presentation of this tumor will be presented and discussed. **STUDY DESIGN:** Case report. **METHODS:** Case report and review of the literature of a unique presentation of an esthesioneuroblastoma (Kadish Stage A, Biller stage T1, UCLA stage T1). **RESULTS:** The patient was seen by an oral surgeon for dental extraction and noted to have an abnormal Panorex prior to extraction. Imaging delineated a mass in the inferior aspect of the left maxillary sinus. Multiple biopsies were consistent histopathologically and via immunostaining with esthesioneuroblastoma. The patient underwent a left subtotal maxillectomy. Pathology revealed well-differentiated esthesioneuroblastoma with negative surgical margins. The patient did not receive adjuvant treatment. **CONCLUSIONS:** Although it has been postulated, the literature reveals no cases of esthesioneuroblastoma arising from the floor of the maxillary sinus as is seen in this patient. The patient has been seen in follow-up for over a year and remains disease free.

37. Lingual Abscess Presenting as Obstructive Tongue Swelling in a Diabetic Patient

Yelizaveta V. Shnyder, MD, New York, NY
Kelvin C. Lee, MD, New York, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss presentation, possible etiology, and differential diagnosis of obstructive swelling of the tongue as well as management of lingual abscesses.

OBJECTIVES: Lingual swelling causing airway obstruction due to angioedema is commonly seen by otolaryngologists. Our current report describes the uncommon manifestation of a lingual abscess in a diabetic patient, presenting as progressive diffuse lingual swelling. We review potential etiologies, pitfalls in diagnosis as well as management and treatment strategies of lingual swelling. **STUDY DESIGN:** Retrospective case report and literature review. **METHODS:** Case report of an anterior tongue swelling in a 45 year-old diabetic female, presenting to a major university medical center. **RESULTS:** Lingual abscesses can present as diffuse tongue enlargement, with associated oropharyngeal and supraglottic edema, mimicking angioedema and leading to progressive respiratory compromise. In case of a worsening diffuse lingual abscess, airway should be stabilized by fiberoptic nasotracheal intubation, or by tracheotomy if necessary. CT

of the neck, with intravenous contrast, offers rapid, safe and the most cost-effective diagnostic imaging modality. Needle aspiration confirms the diagnosis, and subsequent incision and drainage provides definitive cure. **CONCLUSIONS:** In evaluating the patient who presents with diffuse tongue swelling, the clinician should consider the possibility of a primary abscess of the tongue. Though rare, its progressive nature demands prompt diagnosis and treatment to minimize potential patient morbidity.

38. Nontraumatic Cerebrospinal Fluid Rhinorrhea as a Result of Pseudotumor Cerebri

Amar Suryadevara, Syracuse, NY
Charles I. Woods, MD, Syracuse, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate that pseudotumor cerebri can be a cause of nontraumatic cerebrospinal fluid rhinorrhea.

OBJECTIVES: Cerebrospinal fluid (CSF) rhinorrhea is most often the result of trauma, but it may also occur spontaneously due to nontraumatic causes in some patients. Pseudotumor cerebri, also known as benign intracranial hypertension (BIH), can be an overlooked cause of spontaneous, nontraumatic CSF rhinorrhea. **STUDY DESIGN:** This study will review the literature pertaining to the etiologies of nontraumatic CSF rhinorrhea and focus on a patient with such a leak who had the associated signs and symptoms of pseudotumor cerebri. **METHODS:** Case report of a 46-year-old female who at the age of 44 had intermittent headaches for three months followed by a transient episode of visual loss in her right eye. Approximately one year later, at the age of 45, she complained of intermittent headaches, intracranial noises, ear fullness, and dizziness for a two-month period, followed by clear fluid dripping from her right nostril for ten days. **RESULTS:** The patient's clinical picture was consistent with having pseudotumor cerebri. The diagnosis was missed, however, and the patient developed CSF rhinorrhea a year later. **CONCLUSIONS:** A patient with the signs and symptoms of pseudotumor cerebri should be evaluated, and if the condition is present, treated in order to prevent complications that include irreversible visual loss and CSF rhinorrhea. Particularly, obese female patients in their reproductive years, who are at greatest risk for both pseudotumor and nontraumatic CSF rhinorrhea, should be carefully examined. Similarly, in a patient with spontaneous, nontraumatic CSF rhinorrhea, the differential diagnosis should include pseudotumor cerebri.

39. The Use of Computed Tomography Angiography (CTA) as the Initial Diagnostic Test for Head and Neck Tumor Hemorrhage

Mark H. Tabor, MD, Newark, NJ
Jonathan D. Forman, MD, Newark, NJ
Soly Baredes, MD*, Newark, NJ
Jefferey Farkas, MD, Newark, NJ

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the various diagnostic modalities available to the head and neck surgeon for the evaluation of bleeding from head and neck tumors. The participant should be able to compare the different modalities and explain the benefits of CTA as the initial diagnostic procedure of choice as compared to traditional contrast angiography.

OBJECTIVES: Hemorrhage from advance head and neck tumors is a difficult to manage and often life threatening event for our patients. This is often treated effectively by traditional angiography and tumor vessel embolization. Our objective is to show that CTA is a useful initial diagnostic modality prior to traditional angiography and embolization and may allow for a more effective result with less patient morbidity. **STUDY DESIGN:** A retrospective review of our experience (4 cases) using CTA as the initial imaging modality for patients with hemorrhage from head and neck tumors. **METHODS:** Our patients first underwent CTA, prior to the definitive procedure of traditional angiography with tumor embolization. CTA was used simultaneously to evaluate the extent of the tumor and to localize the site of bleeding. **RESULTS:** The initial localization of the site of hemorrhage by CTA led to a more selective traditional angiogram limited to the bleeding area of the tumor. We were better able to visualize the three dimensional characteristics of the tumor and its relation to major blood vessels. In all patients the bleeding was effectively controlled. **CONCLUSIONS:** CTA is a useful complement to traditional angiography and embolization in patients with hemorrhage from head and neck tumors. We believe that the definitive embolization was more effective, quicker and less morbid due to the initial evaluation with CTA. CTA may be the initial diagnostic procedure of choice for patients with hemorrhage from head and neck tumors.

40. External Auditory Canal Foreign Body Removal Management Practices and Outcomes

Scott K. Thompson, MD+, Rochester, NY
Richard O. Wein, MD, Philadelphia, PA
Paul O. Dutcher, MD, Rochester, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss appropriate management practices for foreign bodies of the external auditory canal based on established data.

OBJECTIVES: This study seeks to evaluate the effectiveness of external auditory canal (EAC) foreign body removal attempts by emergency room physicians. In addition, we explore the management outcomes of patients with initial unsuccessful removal attempts who were subsequently seen by otolaryngologists. **STUDY DESIGN:** Retrospective case series. **METHODS:** Medical records of patients presenting with EAC foreign bodies to the emergency department over a 3-year period were reviewed. Information recorded included type of foreign body, side of presentation, length of time in place, signs and symptoms at presentation, management practices, and outcomes. **RESULTS:** 162 patients with a diagnosis of EAC foreign body were identified. 67.3% were successfully managed by emergency personnel, and 32.7% required otolaryngologic consultation. Analysis of successfully removed objects revealed that 82% were irregularly shaped objects with soft, graspable parts. Conversely, 72% of otolaryngology referrals were firm, rounded objects such as beads and beans. The use of bayonet forceps and suction by emergency room personnel proved ineffective for such objects. 49% of patients referred for otolaryngologic evaluation were managed in the office and 19% required removal under anesthesia. The remainder failed to follow up. If a patient had removal attempts prior to the emergency room evaluation, further ED intervention was universally unsuccessful. A disproportionate number of these patients required operative intervention and/or suffered tympanic membrane perforation. Patients who were referred directly to otolaryngologists were more likely to be successfully managed without anesthesia. **CONCLUSIONS:** The majority of patients who present to emergency departments with foreign bodies of the EAC are successfully managed by emergency room personnel. For patients with smooth, rounded objects, direct otolaryngology consultation without further manipulation should be strongly considered. Patients who have had previous removal attempts should not undergo further manipulation in the ED but rather should be referred directly to otolaryngologists.

41. Case Report: Intractable Geniculate Neuralgia Surgically Corrected With Facial Nerve Section

Dudley J. Weider, MD*, Lebanon, NH
Victor M. Ochoa, MD, Bronx, NY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the role of the seventh cranial nerve in the pathogenesis of deep ear pain and appreciate the therapeutic value of surgical intervention.

OBJECTIVES: Our objective is to inform otolaryngologists about the syndrome of deep ear pain caused by cranial nerve VII neuralgia and of the benefits of surgical intervention. **STUDY DESIGN:** Single case study and literature review. **METHODS:** We describe the clinical course of treatment of one individual and results of a review of relevant literature. **RESULTS:** Geniculate neuralgia is a type of severe persistent deep ear pain that was first described by Hunt in 1907. Some have referred to it as 'tic douloureux' of the nervus intermedius. Relief from this type of deep ear pain can be achieved by sectioning the nervus intermedius or the geniculate ganglion. We suggest that the best treatment is a combination of both techniques. Pulec, Rupa, Weider and colleagues have demonstrated that all of the geniculate ganglion cells may be scattered in the substance of the facial nerve near the ganglion. Therefore, the practice of Pulec and I has been removal of about 20% of the adjacent facial nerve. In this particular case report, it was necessary to sacrifice the entire nerve to attain a pain free state that has lasted nearly three years. **CONCLUSIONS:** Sectioning both the nervus intermedius and the geniculate ganglion is the preferred surgical intervention for intractable cranial nerve VII pain. In severe cases, extensive destruction of the facial nerve may be necessary.

42. The Expression of Hyaluronan and Related Receptors in Mucoepidermoid Carcinoma

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Carl T. McGary, MD, PhD, Woodbury, MN
Timothy D. Doerr, MD, Rochester, NY
Saurin R. Papat, MD, FRCS, Rochester, NY
John L. Howard, MD, Rochester, NY
Paul H. Weigel, PhD, Oklahoma City, OK

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the findings of an assay for hyaluronan and its associated receptors as it applies to mucoepidermoid carcinoma.

OBJECTIVES: Hyaluronan (HA) is a prominent extracellular matrix component undergoing continuous production and degradation. Increased production has been described in a variety of tumors. The objective of this study was to examine the staining patterns of HA, and its associated receptors (CD44 and HARE), in relation to the metastatic potential of mucoepidermoid carcinoma. **STUDY DESIGN:** Immunohistochemical staining of archival specimens. **METHODS:** 12 patients with salivary mucoepidermoid carcinoma (10 parotid, 1 submandibular gland, 1 minor salivary gland) composed the study population. 50% of patients had regional metastases. Tumor, normal salivary tissue, and lymph nodes were stained for HA, CD44, and HARE. Specimens were assessed for intensity of staining and percent of specimen stained and graded (0-3 scale). **RESULTS:** Normal salivary tissue did not demonstrate staining for hyaluronan, whereas up-regulation of HA expression was noted in tumor ($p = 1.6 \times 10^{-5}$) and in metastatic lymph nodes ($p = 0.0022$). Down-regulation of HARE was noted in N+ lymph nodes. No differences in CD44 expression were witnessed between primary specimens or lymph nodes. Staining patterns for HA, CD44 and HARE were not reflective of metastatic potential of the primary lesions. **CONCLUSIONS:** Increased hyaluronan expression was noted in mucoepidermoid carcinoma compared to normal salivary tissue. This finding may assist in providing a model to explain regional metastasis of such tumors. HA, CD44, and HARE staining patterns were not predictive of regional metastatic potential of primary lesions.

43. Transnasal Endoscopic Approach to Clivus Masses in Children

Ramzi Younis, MD, Miami, FL
Andres Bustillo, MD, Miami, FL
Bill Collins, MD, Miami, FL
Roy Casiano, MD*, Miami, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the differential diagnosis of clivus masses and explain the endoscopic approach to the clivus.

OBJECTIVES: To demonstrate an endoscopic approach to the clivus in a child. To report an unusual case of desmoplastic fibroma of the clivus. To discuss the differential diagnosis and management of clivus tumors in children. **STUDY DESIGN:** A case report and review of the literature. **METHODS:** A 13 year old white girl presented with three year history of dull headaches. Review of systems was otherwise negative and her physical exam within normal limits. The MRI and CT of the brain were suggestive of a glioma in the clivus. The patient was taken to the OR for an endoscopic trans-sphenoidal biopsy of the clivus mass. The pathology was interpreted as desmoplastic fibroma. **RESULTS:** Desmoplastic fibroma is an uncommon tumor with less than 200 cases published in the literature. In the head and neck, it is most commonly found in the mandible. It is a slowly progressing tumor with well-differentiated cells that produce collagen. This benign tumor is characterized by aggressive local infiltration. Up to date there are no reports of this tumor appearing in the clivus. The traditional approaches for tumors located in the clivus involve extensive craniofacial procedures. We describe an endoscopic transnasal approach to the clivus. **CONCLUSIONS:** We report on a rare unique desmoplastic fibroma of the clivus. Transnasal endoscopic approach to the clivus may be a new, less morbid approach. The diagnosis and treatment of clivus tumors is challenging and requires further exploration.