

SOUTHERN SECTION PROGRAM

THURSDAY, JANUARY 13, 2005

- 4:00 - Speaker Ready Room - Guava
8:00
- 4:00 - Poster Set Up - Doral Ballrooms A-C
6:00
- 5:00 - Registration - Doral Foyer
8:00
- 6:00 - President's Welcome Reception - Champion's Pavilion
7:30

FRIDAY, JANUARY 14, 2005

POSTERS--DORAL BALLROOMS A-C

- 6:00 - Speaker Ready Room - Guava
4:00
- 7:00 - Registration - Doral Foyer
1:00
- 7:00 - Business Meeting (Members Only) - Mango
7:40
- 7:00 - Continental Breakfast With Exhibitors - Doral Ballrooms A-C
7:40
- 7:00 - Exhibit Hall Open - Doral Ballrooms A-C
12:45
- 8:00 - Spouse Hospitality - Legend's Boardroom
10:00
- 8:00 - SCIENTIFIC SESSIONS - DORAL BALLROOM D
12:30
- 7:50 **Welcome and Introduction of President, Patrick E. Brookhouser, MD*,
Omaha, NE**
Robert L. Baldwin, MD*, Birmingham, AL
- 7:55 **PRESIDENTIAL ADDRESS**
Patrick E. Brookhouser, MD*, Omaha, NE
- 8:05 **Introduction of Vice Presidential Citations**
A. Paul Keller, MD*, Athens, GA
Charles W. Gross, MD*, Charlottesville, VA
Julius N. Hicks, MD*, Birmingham, AL
John R. Emmett, MD*, Memphis, TN
Robert A. Jahrsdoerfer, MD*, Charlottesville, VA
- 8:15 **Introduction of Guest of Honor**
J. Finley McRae, MD, Birmingham, AL
- 8:20 **Introduction of Keynote Speaker and Keynote Address**
Predicting the Future of the Community/Academic Practice Interface
G. Richard Holt, MD*, San Antonio, TX

OTOLOGY SECTION

**MODERATORS: THOMAS L. EBY, MD*, BIRMINGHAM, AL
DENNIS G. PAPPAS, JR., MD*, BIRMINGHAM, AL**

- 8:30 **Pediatric Cholesteatoma: A Retrospective Review**
Scott A. Schraff, MD, Norfolk, VA
Barry S. Strasnick, MD, Norfolk, VA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss and critique the management techniques of pediatric cholesteatoma such as intact wall versus open cavity, second look and ossicular reconstruction.

OBJECTIVES: The optimal treatment for pediatric cholesteatoma remains a controversial issue. Management decisions including intact canal wall versus open cavity techniques, second look procedures and staging ossicular reconstruction continue to be debated. In an attempt to clarify this issue we conducted a ten year retrospective analysis of our experience with cholesteatoma presenting in our pediatric population. **STUDY DESIGN:** Retrospective review of children undergoing surgical intervention for cholesteatoma at a tertiary care pediatric hospital between July 1, 1993 and December 30, 2002 by the senior author. **METHODS:** Comparison of the differ-

ent techniques (intact vs. canal wall down, second look procedures and ossicular chain reconstruction) regarding management of cholesteatoma in the pediatric patient with analysis of recurrence rate and hearing improvement success with and without ossicular chain reconstruction. **RESULTS:** During this study period 278 children underwent surgical resection of their cholesteatoma. Of these children, 221 were managed via an intact canal wall approach while the remaining 57 underwent an open cavity procedure. The overall recurrence rate in this series was 16%. Ossicular reconstruction if necessary was performed in a staged fashion in 89% of the intact canal wall group. Hearing results along with postoperative complications will be presented. **CONCLUSIONS:** Management of pediatric cholesteatoma requires a highly individualized approach that takes into account anatomic, clinical and social factors to determine the most successful surgical treatment paradigm.

8:38 External Auditory Canal Closure: An Alternative Management for the Chronically Draining Ear

Naohiro Yoshida, MD PhD, Sendai, Aoba-Ku Japan
John T. McElveen, Jr., MD*, Raleigh, NC (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss alternative managements for patients with chronically draining ears refractive to standard treatment modalities.

OBJECTIVES: The study aimed to discuss the surgical technique and to evaluate the effectiveness of external auditory canal (EAC) closure in patients with refractory chronically draining ears. **STUDY DESIGN:** Retrospective case review of seven patients who underwent EAC closure between 2001 and 2004. **METHODS:** Out of 730 patients undergoing chronic ear surgery between 2001 and 2004, seven patients underwent EAC closure for chronically draining ears at a tertiary otologic referral center. In three of the seven patients a BAHA implant was placed concomitantly, and in one patient a cochlear implant was placed during a second stage procedure. Presence or absence of drainage postoperatively, and preoperative as well as postoperative audiological data were measured. **RESULTS:** Seven patients had successful closure of the external auditory canal with elimination of chronic drainage. In the three patients undergoing BAHA placement, the hearing levels were improved to within 5 dB of the preoperative bone scores. The follow-up interval ranged from 10 months to 2 years 11 months. There were no cases of iatrogenic cholesteatoma formation or breakdown of the ear canal closure. **CONCLUSIONS:** In patients with refractory chronically draining ears, who would otherwise require a radical mastoidectomy or revision tympanomastoidectomy, EAC closure, alone or in conjunction with a bone anchored implant or cochlear implant may be a preferable treatment. The BAHA can be placed during the initial procedure or staged. The cochlear implant should be placed during a second stage procedure to minimize the risk of infection entering the perilymph.

8:46 Management of Brain Herniation and Cerebrospinal Fluid Leak in Revision Chronic Ear Surgery

Christopher T. Wootten, MD, Nashville, TN
David M. Kaylie, MD, Nashville, TN
Frank M. Warren, MD, Nashville, TN
Charles G. Jackson, MD*, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the management of cerebrospinal fluid leak and brain herniation in revision chronic ear surgery.

OBJECTIVES: Brain herniation and cerebrospinal fluid (CSF) leak into the middle ear and mastoid are rare but described complications of surgery for chronic ear disease. Despite proper surgical management, chronic otitis media and cholesteatoma can recur, and revision surgery encounters anatomic anomalies at a higher rate. This paper will discuss the management of brain herniation and CSF leak encountered in revision chronic ear surgery. **STUDY DESIGN:** Retrospective chart review of 1130 cases. **METHODS:** Twelve cases of revision chronic ear surgery in which brain herniation or CSF leak was diagnosed were identified and analyzed. **RESULTS:** Ten patients' (83%) initial diagnosis was tympanic membrane (TM) perforation with cholesteatoma and 2 (17%) with TM perforation without cholesteatoma. Initial revision procedures included 1 tympanoplasty with canal-wall-up (CWU) mastoidectomy maintaining ossicular continuity (8.3%), 2 tympanoplasties with canal-wall-down (CWD) mastoidectomies with ossicular chain reconstruction (OCR) (17%) and 9 tympanoplasties with CWD mastoidectomies without OCR (75%). Three (25%) required a second procedure, 2 (17%) a third, and 1 (8.3%) a fourth, finally resulting in 4 (33%) with some reconstruction in place and 8 (67%) without. Dural transgressions were repaired via transmastoid and middle fossa approaches. Preoperative and postoperative pure tone average air bone gaps (PTA-ABG) were statistically similar (33.1 dBHL and 28.1 dBHL respectively; $p=0.464$). **CONCLUSIONS:** Brain herniation and CSF leak appear to be rare complications of surgery for chronic ear disease. Its management requires adherence to the principles of establishing a safe ear with hearing restoration as a secondary goal.

8:54 Use of AlloDerm in Type I Tympanoplasty: A Comparison to Native Tissue Grafts

Jeremy D. Vos, MD+, Nashville, TN
Maria D. Latev, BA, Nashville, TN
Robert F. Labadie, MD PhD, Nashville, TN
Seth M. Cohen, MD MPH, Nashville, TN
Jay A. Werkhaven, MD, Nashville, TN
David S. Haynes, MD, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the merits of using AlloDerm as a tympanic membrane graft and compare its performance with that of other native tissue grafts.

OBJECTIVES: AlloDerm, an acellular human dermis allograft, has been shown to be an effective option as a tympanic membrane (TM) graft in animals and humans, and has several potential advantages, including eliminating donor site morbidity, reducing operative time, and preserving native tissues for later use. We compared AlloDerm and native tissue grafts in type I tympanoplasty with regard to operative time, graft success rate, and audiologic outcome. **STUDY DESIGN:** A retrospective chart review of tympanoplasties performed at a major tertiary referral hospital over a 31 month period, starting with the first use of AlloDerm for TM grafting at this institution. **METHODS:** The medical charts of all patients undergoing tympanoplasty were reviewed. Only those patients undergoing type I tympanoplasty without mastoidectomy or ossicular chain reconstruction were included. These 114 patients (25 AlloDerm, 56 fascial tissues, and 33 fascial tissues plus cartilage) were compared for operative time, success rate of the graft, and improvement in audiological outcome. **RESULTS:** There was a statistically significant reduction in operative time in the AlloDerm group when controlled for surgeon and choice of approach. All groups showed no statistically significant difference in the success rate of the graft and closure of audiological air bone gap regardless of graft material used. **CONCLUSIONS:** AlloDerm is an effective tympanic membrane graft when used in type I tympanoplasty. It is as effective as native tissues in closing the air bone gap on audiogram, as well as graft success rate. AlloDerm may also significantly reduce operative time, depending on the surgeon's technique.

9:02 An Anatomic and Radiographic Evaluation of Access to the Lateral Internal Auditory Canal via the Retrosigmoid Approach

Robert S. Miller, MD, Charlottesville, VA
Myles L. Pensak, MD*, Cincinnati, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss advantages and disadvantages of the retrosigmoid approach, to understand the limits of access to the lateral internal auditory canal, and to describe an internal labyrinthectomy.

OBJECTIVES: The retrosigmoid approach to the posterior petrous bone is utilized as a hearing preservation operation for extirpation of posterior fossa and internal auditory canal (IAC) lesions. However, access is limited to the medial IAC, even after removing retrolabyrinthine bone. Our goal was to anatomically re-evaluate the retrosigmoid approach with respect to accessing the lateral IAC. Then we wanted to determine the utility of preoperative computed tomography (CT) scans in predicting intraoperative access to the lateral IAC. Finally we describe an internal labyrinthectomy as an option to provide access to the lateral IAC. **STUDY DESIGN:** Cadaveric and radiologic study. **METHODS:** A standard retrosigmoid approach was performed on one side of 5 whole fresh cadaveric heads. The IAC was identified and critically evaluated. The retrolabyrinthine bone was removed and access to the lateral IAC was reassessed. An internal labyrinthectomy was then performed on each specimen. These measurements were compared to CT scans of each cadaveric head. **RESULTS:** The average length of the IAC was 10.4mm (SD 2.3mm). The average amount of IAC inaccessible after removing retrolabyrinthine bone was 6.3mm (SD 1.3mm). The average gain in access to the lateral IAC was 4.1mm (SD 1.3mm). An internal labyrinthectomy provided access to the fundus of the IAC in each specimen. **CONCLUSIONS:** The retrosigmoid approach provides access to the posterior petrous bone, and removal of retrolabyrinthine bone provides some additional access to the IAC. However an internal labyrinthectomy is necessary to provide access to the fundus of the IAC via the retrosigmoid approach.

9:10 Discussion

9:18 Facial Nerve Stimulation Following Cochlear Implantation—A Comparison of Three Types of Devices

Jennifer L. Smullen, MD, Miami, FL
Marek Polak, PhD, Miami, FL
Annelle V. Hodges, PhD, Miami, FL
Thomas J. Balkany, MD*, Miami, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the etiology and presentation of facial nerve stimulation following cochlear implantation. Compare device type for implantation based on patient and electrode criteria.

OBJECTIVES: This study was designed to compare the incidence and nature of facial nerve stimulation in patients receiving cochlear implants manufactured by Cochlear Corporation, Advanced Bionics Corporation and MedEL. Analysis included etiology of deafness, age and gender of patients, intraoperative anatomy, number and site of electrodes causing facial nerve stimulation, properties common to electrodes causing facial nerve stimulation, postoperative onset of symptoms and characteristics of facial movement. **STUDY DESIGN:** Retrospective case review performed at a tertiary referral site. **METHODS:** Retrospective case review performed at a tertiary referral site. **RESULTS:** Thirty-five patients (5.8%) required deactivation of at least one electrode due to facial nerve stimulation after evaluation of device, imaging and reprogramming. Programming strategies and selective deactivation were successful in eliminating facial nerve stimulation in all but three patients. Differences among device types and between perimodiolar and anti-modiolar electrodes were demonstrated. **CONCLUSIONS:** In this largest series of cases of facial nerve stimulation published to date, several specific characteristics of individual device types which affect facial nerve stimulation have been identified. These will be presented with clinical implications toward device selection in specific diagnoses. Evaluation and treatment of facial nerve stimulation at our institution is reviewed.

9:26 Neurotologic Management of Intracranial Epidermoid Cysts

David M. Kaylie, MD, Nashville, TN
Frank M. Warren, MD, Nashville, TN
C. Gary Jackson, MD*, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the surgical planning and management of intracranial epidermoid cysts.

OBJECTIVES: Epidermoid cysts are the most common intracranial embryonal tumor, although they account for only 1% of all intracranial tumors. Epidermoids often spread into several intracranial compartments. Thorough preoperative surgical planning is imperative for safe epidermoid removal. This paper discusses the neurotologic management of intracranial epidermoid cysts. **STUDY DESIGN:** Retrospective chart review. **METHODS:** A database search revealed 10 patients with diagnosis of intracranial epidermoid cysts between 1/1/1971 and 12/31/2003 at our institution. **RESULTS:** Six males and four females with ages ranging from 18 to 54 years old underwent surgery between 9/1/71 and 11/4/03. The average tumor size was 3.9 cm, six originated in the cerebellopontine angle and four in the petrous apex. Six patients had a translabyrinthine approach to the tumor, two with additional transcochlear exposure. Two patients had tumors removed via the middle fossa approach and one through suboccipital approach. Multiple cranial nerves were involved by tumor in all patients, including nerves III through XI. The internal carotid artery was involved by tumor in four patients. Multiple cranial nerve deficits were seen preoperatively, and facial weakness was the most common new deficit postoperatively. Eight patients required intradural access for complete tumor removal. Seven had complete tumor removal. Headaches were the most common complication. One patient had seizures postoperatively and another had a malignant epidermoid which resulted in death. **CONCLUSIONS:** Intracranial epidermoid cysts require complex surgical planning. They invariably involve multiple cranial nerves and often the carotid. Complete resection is frequently possible with minimal new cranial nerve deficits.

9:34 A Retrospective Review of Adults Implants with the Med-EL COMBI40+ at a Single Institution

Marc K. Bassim, MD, Chapel Hill, NC
Carol A. Higgins, MS, Chapel Hill, NC
Emily E. Buss, PhD, Chapel Hill, NC
Craig A. Buchman, MD*, Chapel Hill, NC
Karen A. Kölln, MD, Chapel Hill, NC
Harold C. Pillsbury, MD*, Chapel Hill, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the surgical outcomes, complications and performance of patients with cochlear implants.

OBJECTIVES: Cochlear implantation is currently the treatment of choice for severe-to-profound sensorineural hearing loss. Improvements in our understanding of speech perception and the underlying physiological processes, as well as recent technological developments, have resulted in improved outcome for cochlear implant recipients. The present report reviews a single institution's experience with the MED-EL C40+ implant in adults, including a total of 107 patients implanted over 4 years. **STUDY DESIGN:** Retrospective chart review. **METHODS:** Data were collected in a retrospective chart review of patients implanted with a MED-EL COMBI40+ at a single institution between December 1998 and April 2004. **RESULTS:** Although the study group included seniors, the rate of surgical complications was low and compared favorably with that of standard middle ear surgery. Speech performance scores after 12 months of use are reported and are in good agreement with the adult cochlear implant literature. Average CNC and CUNY scores at one year were 51% and 90% respectively. Most of the improvement was observed at the 3-month post-activation assessment with continuing improvement for the duration of the study. **CONCLUSIONS:** These results support the safety and efficacy of cochlear implantation with the C40+ as a treatment for patients with severe hearing loss.

9:42 Speech Perception After Bilateral Cochlear Implantation in Adults With Two Year Implant Experience

Subinoy Das, MD+, Chapel Hill, NC
Emily Buss, PhD, Chapel Hill, NC

Marcia S. Clark, MS, Chapel Hill, NC
Amy S. Barco, MA, Chapel Hill, NC
Craig A. Buchman, MD*, Chapel Hill, NC
Harold C. Pillsbury, MD*, Chapel Hill, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the benefits of bilateral cochlear implantation in postlingually deafened adults and compare results with patients with unilateral implants. Participants should be able to compare benefits with two year implant experience versus benefits with shorter duration of experience.

OBJECTIVES: To measure later acquired benefits in speech perception in postlingually deafened adults undergoing bilateral cochlear implantation. **STUDY DESIGN:** Prospective, single center study examining auditory function in 8 adults with at least two year follow-up after bilateral cochlear implantation. Speech perception was compared to one year implant experience results and to age and gender matched control subjects who underwent unilateral cochlear implantation. **METHODS:** Eight postlingually deafened adult patients with a short duration of deafness were implanted bilaterally with the MED-ELCOMBI 40+ cochlear implant. Speech perception was tested preoperatively and at 3 month intervals after implantation using CNC words and CUNY sentences in quiet and noisy testing conditions presented via direct audio input. **RESULTS:** Speech perception was significantly improved in adults with 2 year bilateral implant experience compared to 1 year bilateral implant experience and to control subjects with unilateral implants. Adults demonstrated significant benefits in head shadow, binaural summation, and squelch effects. The two year follow-up results suggested a significant later acquired benefit in patients with bilateral implants. **CONCLUSIONS:** Bilateral cochlear implants provide a functional benefit to speech perception beyond what is provided by unilateral implantation. Many of these effects appear to be later acquired benefits.

9:50 Impact of Duty Hour Limitations on Resident Education in Otolaryngology-Head and Neck Surgery

Evan R. Reiter, MD, Richmond, VA
Denise R. Wong, BS, DPharm, Richmond, VA (*Presenter*)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the challenges of implementing the ACGME duty hour standards into otolaryngology training, and explain residents' and program directors' perceptions of the impact of these standards on residency training in otolaryngology.

OBJECTIVES: Assess residents' and program directors' (PDs) perceptions of ACGME duty hour standards. **STUDY DESIGN:** Survey. **METHODS:** Survey of residents and PDs in otolaryngology-head and neck surgery. **RESULTS:** 194 of 1064 (18.2%) residents, and 41 of 101 (40.6%) PDs responded. Residents averaged 67.8 work hours per week, 6.4 hours of sleep per night, and 30.9 minutes recording duty hours per week. PDs reported mean yearly costs of \$47,446 for changes required to achieve compliance. Most programs changed resident call structure (58.5%), increased use of home call (46.3%), or hired additional support staff (14.6%). With respect to specific duty hour standards, most residents indicated "always" being in compliance with 80 hours per week averaged over 4 weeks (60.6%), 1 day off in 7 averaged over 4 weeks (69.1%), and in-house call no more than every 3rd night (69.3%), while only 48.9% were "always" in compliance with working no more than 30 continuous hours. PDs reported similar, but higher levels of compliance with these standards: 80 hours per week - 61.0%; 1 day off in 7 - 75.6%; call no more than every 3rd night - 75.6%; working no more than 30 continuous hours - 65.9%. Less than 10% of PDs agreed that the standards have improved patient care by residents, resident education, resident fatigue, or resident errors, while 23.5%, 28.6%, 37.3%, and 16.6% of residents, respectively, agreed that improvement has occurred in these areas. **CONCLUSIONS:** Compliance with ACGME duty hour standards continues to be challenging. The majority of PDs, and almost half of residents, feel the duty hour standards have not improved resident education or patient care.

9:58 Discussion

10:06 Break With Exhibitors - Doral A-C

RHINOLOGY SECTION
MODERATORS: FREDERICK A. KUHN, MD*, SAVANNAH, GA
DAVID J. TERRIS, MD*, AUGUSTA, GA

10:35 SECOND PRIZE - FRANCES LEJEUNE RESIDENT RESEARCH AWARD
Detection of Fungi in the Sinus Mucosa Using Polymerase Chain Reaction

Arvin K. Rao, MD+, Morgantown, WV
Peter H. Mathers, PhD, Morgantown, WV
Hassan H. Ramadan, MD MSc*, Morgantown, WV

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to define the criteria used to diagnose allergic fungal sinusitis, discuss the problems diagnosing allergic fungal sinusitis with precision, and compare the prevalence of fungi in the sinus mucosa of patients with and without chronic rhinosinusitis.

OBJECTIVES: The extent of allergic fungal sinusitis in chronic rhinosinusitis is unknown. For fungi to be implicated in the pathogenesis of chronic rhinosinusitis, fungi must be present in the sinus mucosa. With this premise, our objective was to compare the prevalence of fungi in the sinus mucosa of patients with and without chronic rhinosinusitis. This objective required that we develop a more sensitive and specific assay for fungi in chronic rhinosinusitis. **STUDY DESIGN:** Prospective observational study comparing polymerase chain reaction with conventional culture for detection of fungi in the sinus mucosa. **METHODS:** Middle meatus mucosal samples were collected from 31 patients with chronic rhinosinusitis and 14 control subjects. Polymerase chain reaction using a universal fungal specific primer was performed on each sample. Results were compared to growth on conventional culture. Results were correlated with co-morbidities associated with allergic fungal sinusitis including inhalant allergies, nasal polyposis, and asthma. **RESULTS:** Fungi were detected in 6.5% of patients with chronic rhinosinusitis and 0 control subjects using polymerase chain reaction. All conventional cultures were negative for fungus. Fungi were detected in 29% of patients with the combination of inhalant allergies, nasal polyposis, and asthma. Fungi were detected in none of the patients without the combination of these three co-morbidities ($p = 0.03$). **CONCLUSIONS:** Middle meatal mucosal sampling with polymerase chain reaction assay appears to be a sensitive and specific assay for fungi in chronic rhinosinusitis. Our findings indicate that fungi cannot be implicated in the pathogenesis of most chronic rhinosinusitis.

10:45 Transnasal Endoscopic Resection of Clival Lesions: A Preliminary Report

C. Arturo Solares, MD, Cleveland, OH
Samer Fakhri, MD, Cleveland, OH
Pete S. Batra, MD, Cleveland, OH
Joung Lee, MD, Cleveland, OH
Donald C. Lanza, MD, Cleveland, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should: 1) become cognizant of the challenges associated with clival lesions; and 2) be able to appreciate that minimally invasive endoscopic approaches are a viable option for the management of clival lesions.

OBJECTIVES: The treatment of clival lesions is challenging due to the proximity to vital structures and the difficulty in achieving wide surgical exposure. In an effort to overcome these obstacles, many centers use facial incisions and osteotomies to approach clival lesions. Minimally invasive endoscopic techniques have the potential to minimize morbidity while yielding successful tumor extirpation. We report our experience with transnasal endoscopic resection of clival lesions. **STUDY DESIGN:** Retrospective chart analysis. **METHODS:** Six patients were identified with clival tumor involvement between 2000-04. Charts were reviewed for age, gender, previous therapy, pathologic diagnosis, tumor extent, post-operative complications, mean follow-up, and use of adjuvant therapy. **RESULTS:** The mean age was 50 years (range, 29-66 years) with 2:1 male:female ratio. Four lesions were "benign" and 2 malignant: clival chordomas (3 cases), and meningioma, adenoid cystic carcinoma, and sinonasal undifferentiated carcinoma (1 case each). Three patients had prior craniotomy for tumor removal with an insufficient result. All were approached endoscopically via the transnasal route with neurosurgical standby or involvement. The mean follow-up was 10 months (range, 2-24 months). All had residual disease after surgery; three have undergone radiation therapy and 3 are being evaluated for proton beam therapy. None suffered post-operative CSF leak or neurological deficits. One patient had significant post-operative improvement of cranial nerve palsies and one died of unrelated causes. **CONCLUSIONS:** Morbidity of the endoscopic approach is less than that typically observed with the traditional open approaches. This preliminary experience suggests that an endoscopic approach is a viable alternative in the appropriate clinical setting with experienced endoscopists.

10:53 FIRST PRIZE - JAMES HARRILL RESIDENT RESEARCH AWARD
Bacterial Biofilms in Surgical Specimens of Patients With Chronic Rhinosinusitis

Jose A. Sanclement, MD+, Morgantown, WV
Hassan H. Ramadan, MD*, Morgantown, WV
Paul Webster, PhD, Los Angeles, CA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the basics of biofilm biology. We shall present, and demonstrate compelling evidence of their presence in patients with chronic rhinosinusitis. We will demonstrate advanced and basic techniques to examine human mucosal samples using electron microscopy.

OBJECTIVES: Biofilms are how bacterial pathogens organize in several chronic and recalcitrant infectious processes. It is now clear that sessile bacteria (biofilms) behave differently than planktonic ones. We hypothesize that biofilms also play a role in chronic rhinosinusitis (CRS) pathophysiology. Our goal is to demonstrate biofilms in mucosal specimens of patients undergoing surgery for CRS. **STUDY DESIGN:** A prospective study of the presence of biofilms in patients undergoing endoscopic sinus surgery for CRS compared to control patients without CRS. **METHODS:** The samples of 24 subjects, and 4 controls, were cultured, then prepared utilizing standard methods for scanning electron microscopy (SEM). An additional 6 subjects' samples were immediately treated using advanced cryo-fixation methods as preparation for SEM and transmission electron microscopy (TEM). Micrographs were taken systematically. **RESULTS:** Using strict SEM morphologic criteria 63% of the 24 patients were found to have micrographic evidence of biofilms. All controls had healthy appearing cilia and goblet cells without biofilms. The 6 cryo-fixation samples showed biofilm structures on SEM micrographs that were correlated to bacterial structures seen at the mucosal surface on the corresponding TEM cross sections. All cultures grew bacteria. **CONCLUSIONS:** Biofilms were demonstrated to be present in patients undergoing surgery for CRS, none of the patients without CRS had any evidence of biofilms. While SEM is capable of demonstrating the biofilms' 3D structure, glycocalyx, and water channels, it cannot demonstrate the presence of bacteria within the biofilm. We were able to demonstrate evidence of bacteria in the biofilms on the subjects tested using TEM.

11:03 Outcomes for Endoscopic Resection of Sinonasal Squamous Cell Carcinoma

Pete S. Batra, MD, Cleveland, OH
Taha Z. Shipchandler, MD, Cleveland, OH (Presenter)
Martin J. Citardi, MD, Cleveland, OH
Donald C. Lanza, MD, Cleveland, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to evaluate the effectiveness and morbidity associated with endoscopic resection of sinonasal squamous cell carcinomas.

OBJECTIVES: Preliminary data suggests efficacy of the endoscopic approach for sinonasal malignancy. The purpose of this study is to evaluate the effectiveness of the endoscopic approach for the resection of sinonasal squamous cell carcinoma (SCC). **STUDY DESIGN:** A retrospective chart analysis was conducted to identify patients who underwent endoscopic resection of sinonasal SCC from August 1996 to May 2004. **METHODS:** Ten patients were identified for the study who were all treated with curative intent. Demographic data, histopathology, extent of tumor involvement, and need for adjunctive chemotherapy and/or radiation were determined. Recurrence rate, metastasis rate and overall survival were calculated. **RESULTS:** The mean age of the patients was 62.2 years (range 52-85), and median follow-up time was 25 months (range 1-69). Multimodality therapy including chemotherapy and/or radiation was utilized in 7 of 10 patients (70%). Six patients were resected using strictly an endoscopic approach, while 4 required a combined endoscopic and neurosurgical resection. Local recurrence rate and distant metastatic rate were 10% and 0%, respectively. Overall survival rate and disease free survival rate were both 90%. **CONCLUSIONS:** Endoscopic resection in combination with multimodality therapy is an effective method for curative cancer treatment of sinonasal SCC. In this preliminary study, it allows complete resection with a low recurrence rate and a high disease free survival rate with acceptable morbidity.

11:11 Endoscopic Placement of Spreader Grafts in the Nasal Valve

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

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss and possibly demonstrate a new method of visualizing the nasal valve via an endoscope as well as placing a spreader graft endoscopically.

OBJECTIVES: Surgery to the internal nasal valve is presently approached either externally via an open rhinoplasty incision or transnasally. The endoscopic approach has become the preferred method of access to various other sinonasal conditions. The goal of this study was to evaluate 1) whether the internal nasal valve could be accessed and evaluated endoscopically; and 2) whether a spreader graft placed under endoscopic visualization could widen the nasal valve area. **STUDY DESIGN:** Single blinded cadaveric study. **METHODS:** Eight cadaveric heads were tested. One side per head was randomly selected to be studied. The contralateral side served as the control. The nasal valve was approached endoscopically via the submucoperichondrial plane of the nasal septum with a 30° endoscope. After fully examining and subsequently separating the internal nasal valve, a spreader graft was placed. A blinded examiner then performed acoustic rhinometry to measure the nasal valve area as well as corroborate the position from an external approach. This data was then statistically analyzed using the paired student t-test. **RESULTS:** The nasal valve was easily detected endoscopically and the positions were externally confirmed in all eight specimens. The mean change of the nasal valve area on the side with the spreader grafts was 0.28 cm². On the side without the spreader graft, the mean change was 0.04 cm². This change was statistically significant (P = 0.004). **CONCLUSIONS:** The endoscopic approach is a viable option in accessing the nasal valve. Endoscopic placement of a spreader graft has also been shown to statistically widen the nasal valve area.

11:19 The Role of Systemic Corticosteroids in the Maximal Medical Treatment of Chronic Rhinosinusitis

Andrew P. Lane, MD, Baltimore, MD

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the impact of oral corticosteroid therapy on the decision to perform surgery in patients with chronic rhinosinusitis.

OBJECTIVES: The purpose of this study was to determine whether oral steroids alter the management of chronic rhinosinusitis (CRS) patients meeting criteria for endoscopic sinus surgery. **STUDY DESIGN:** Prospective, academic tertiary care setting. **METHODS:** 64 consecutive patients were studied who had clinical and radiographic evidence of CRS that was unresponsive to at least 6 weeks of oral antibiotics, decongestants, saline washes, and topical nasal steroid sprays. The patients were additionally treated with a month long taper of oral methylprednisolone and then reevaluated by sinonasal endoscopy and CT. They were subsequently followed for the next 24 months. **RESULTS:** Out of the 64 patients, 23 had polypoid sinusitis and 35 had previous endoscopic sinus surgery. By endoscopic appearance and Lund-Mackay CT score, 80% were improved immediately following systemic corticosteroid therapy. 69% had at least transient improvement in their symptoms. Over the next 24 months 57% went on to undergo endoscopic sinus surgery. The remaining patients continued to be managed medically as necessary and did not require surgery over this interval to achieve acceptable control over their symptoms. **CONCLUSIONS:** In a subset of CRS patients who might otherwise be candidates for endoscopic sinus surgery, the addition of oral corticosteroids to the maximal medical therapy regimen prior to surgery appears to alter management. This applies equally to patients with or without previous surgery and those with polypoid or nonpolypoid disease. Further studies are necessary to determine the optimal corticosteroid dosage and to identify patient factors that predict where systemic corticosteroids are most likely to be beneficial.

11:27 Discussion

11:35 PANEL: COMMON LARYNGOLOGICAL DISORDERS: DIAGNOSIS AND MANAGEMENT

MODERATOR: W. Fred McGuirt, MD*, Winston-Salem, NC

PANELISTS: Gregory Postma, MD, Winston-Salem, NC
C. Gaelyn Garrett, MD*, Nashville, TN
Steven A. Bielamowicz, MD, Washington, DC
C. Blakely Simpson, MD, San Antonio, TX

12:21 Announcements and Adjournment

Golf/Tennis (registration required)

6:30 - Meet The Authors Poster Session & Reception - Lobby Terrace

8:00

SATURDAY, JANUARY 15, 2005

POSTERS--DORAL BALLROOMS A-C

6:00 - Speaker Ready Room - Guava
11:00

7:00 - Registration - Doral Foyer
12:00

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

7:00 - Continental Breakfast With Exhibitors - Doral Ballrooms A-C
7:45

7:00 - Exhibit Hall Open - Doral Ballrooms A-C
10:30

8:00 - Spouse Hospitality - Legend's Boardroom
10:00

8:00 - SCIENTIFIC SESSIONS - DORAL BALLROOM D
1:00

8:00 Introduction of Vice President Elect, Fred D. Owens, MD*, Dallas, TX
Robert L. Baldwin, MD*, Birmingham, AL

FACIAL PLASTIC SECTION
MODERATORS: WILLIAM W. SHOCKLEY, MD*, CHAPEL HILL, NC
EUGENIO A. AGUILAR, MD*, HOUSTON, TX

8:06 The Use of Three Dimensional CT Generated Models for Improved Results in Traumatic Head and Neck Reconstruction
John D. Casler, MD, Washington, DC
Andrew P. Battiata, MD, Washington, DC

EDUCATIONAL OBJECTIVE: This presentation will present our recent experiences with explosive head and neck trauma injuries. We will demonstrate the utility and cost effectiveness of the use of 3 dimensional CT generated models in the reconstruction of extensive head and neck trauma.

OBJECTIVES: To demonstrate the utility of scale 3 dimensional CT generated models in the reconstruction of extensive explosive injuries to the head and neck. **STUDY DESIGN:** Case series. **METHODS:** Case series. Pre-operative CT scans were obtained with 1.25mm cuts. Scale 3 dimensional models were then generated from the CT scan data and were used pre-operatively in the manner described below. **RESULTS:** The use of 3 dimensional CT generated models has been very useful in the pre-operative planning, patient counseling and reduction of operating room times for challenging head and neck reconstruction. **CONCLUSIONS:** The widespread use of explosive weaponry against U.S. troops in Iraq has resulted in devastating injuries to the head and neck region. Typical wounds often result in loss of bone, soft tissue, teeth, or ocular structures. Repair and reconstruction of these wounds has been extremely challenging. Recently, the ability to form scale models of the defects from specially formatted 3 dimensional CT scans has been employed to improve pre-operative planning, enhance pre-operative counseling, and to reduce operative times. Our series of patients includes severely comminuted fractures of the midface and mandible, complete loss of midface and mandibular structures, orbital injuries, and cranial defects. Scale models have been used pre-operatively to precisely reduce fractures and reposition fragments. Reconstruction bars have been fitted pre-operatively as well, saving operative time. Osteotomies can be performed on simulated grafts. This modeling technique has been unexpectedly helpful in severe trauma cases and has improved the quality of life for these patients.

8:14 Rethinking Auricular Hematoma
Tamer A. Ghanem, MD PhD+, Charlottesville, VA
Jk J. Rasamny, BA, Charlottesville, VA
Stephen S. Park, MD*, Charlottesville, VA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand: 1) pathophysiology of auricular hematoma; and 2) treatment options and management of auricular hematoma.

OBJECTIVES: Auricular deformity following blunt trauma can lead to a lifelong, disfiguring deformity. The cauliflower ear is thought to be a sequela to an auricular hematoma that went unrecognized or was inadequately evacuated. Fine needle aspiration and pressure bandages remain the mainstay treatment but occasionally fail. We review our experience with the management of "revision" auricular hematomas. **STUDY DESIGN:** Retrospective chart review. **METHODS:** Data was collected from patient chart and operative notes included demographics, time from trauma to repair, intraoperative findings, and follow-up results. **RESULTS:** Six (6) patients presented with a persistent auricular hematoma and deformity following outpatient management, either incision and drainage or fine needle aspiration. All were male with a mean age of 25 years. The average time from trauma to presentation to us was 19 days. Our management included an open incision, aggressive debridement, and long-term bolsters to the ear. No recurrences occurred. The location of the hematoma within this group was not limited to the potential space between the cartilage and perichondrium. The hematoma was clearly located within the cartilage itself and it is postulated that this is one of the primary reasons for initial failure. **CONCLUSIONS:** A select group of patients with refractory auricular hematomas were reviewed. The location of the hematoma, granulation tissue, and neo-cartilage is demonstrated, and the fact that it is within the cartilage itself may explain why a needle aspiration alone can be ineffective. For this group, a more open and aggressive approach may be warranted

8:22 Repair of Helical Rim Defects Using a Single Staged Transposition Flap
Carol J. Langdoc, MD, Gainesville, FL
Jack D. Sedwick, MD, Gainesville, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the use and utility of a novel technique for repair of cutaneous helical rim defects.

OBJECTIVES: To demonstrate the use of a novel technique in the repair of cutaneous helical rim defects using a single staged transposition flap. **STUDY DESIGN:** Case study. **METHODS:** Three patients who underwent Mohs micrographic surgery of cutaneous cancers of the helical rim were repaired using a single staged transposition flap. **RESULTS:** All three patients were noted to have repair of the helical rim contour with minimal cosmetic deformity, minimal donor site morbidity, and excellent tissue match. **CONCLUSIONS:** The single staged transposition flap offers many advantages over previously described techniques. It is easy to design, can be performed in a single stage, results in restoration of the helical rim contour, and results in minimal donor site morbidity.

8:30 Lateral Crus Lateralization for Nasal Valve Collapse

Todd A. Kupferman, MD, Shreveport, LA
Timothy S. Lian, MD, Shreveport, LA
Fredrick J. Stucker, MD*, Shreveport, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe a simple, effective treatment for nasal valve collapse.

OBJECTIVES: To describe a simple, effective method for correction of nasal valve stenosis. **STUDY DESIGN:** A case series of 4 patients. **METHODS:** This method has been performed by the senior author on dozens of patients with long lasting improvement. Nasal valve collapse was diagnosed by: history of nasal obstruction relieved with pulling nose laterally either with fingers or adhesive strips; physical exam which revealed inward excursion of nasal sidewalls on nasal inspiration, relieved with the Cottle maneuver; and nasal endoscopy which was negative for masses or other causes of nasal obstruction. Via an open rhinoplasty approach, the lateral crus of the lower lateral cartilage is separated from the upper lateral cartilage, pulled lateral relative to the upper lateral cartilage, and reattached with mattress sutures to the upper lateral cartilage in the new lateral position. **RESULTS:** All patients underwent the procedure via an open/external rhinoplasty approach specifically to correct their nasal valve stenosis. All patients reported improvement in their nasal airflow in the recovery room and postoperative visits. **CONCLUSIONS:** Lateral crus lateralization offers surgeons a simple and effective method of correcting nasal valve collapse through a well known approach without bulky grafts or incisions outside the nose.

8:38 Resorption of Acellular Dermal Matrix In Vivo and In Vitro by Matrix Metalloproteases

Jonathan P. Lindman, MD+, Birmingham, AL
Melissa A. Talbert, BS, Birmingham, AL
Wenyue A. Zhang, MS, Birmingham, AL
Neil A. Accortt, PhD, Birmingham, AL
Eben L. Rosenthal, MD, Birmingham, AL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the role of matrix metalloproteases and protease inhibitors in the resorption of a commonly used acellular dermis matrix.

OBJECTIVES: To determine if the resorption of a commonly used acellular dermal graft in soft tissue augmentation can be altered by a broad-spectrum inhibitor of matrix metalloproteinases. **STUDY DESIGN:** Laboratory based study. **METHODS:** The degradation of acellular human dermis (Alloderm) specimens was tested in vivo and then in vitro. Acellular human dermis was implanted subcutaneously within guinea pigs after treatment with buffered saline or a peptidyl hydroxamic acid exogenous matrix metalloproteinase (MMP) inhibitor (Galardin, GM6001). Specimens were then removed for histological analysis at 14 and 21 days. Wild type murine fibroblasts as well as those derived from mice deficient in MMP2 were placed atop the basement membrane surface of acellular human dermis and in vitro resorption was assessed. GM6001 was added to specimens cultured with wild type fibroblasts. Specimens were harvested for histological analysis after 20 days. **RESULTS:** Inflammatory host cell infiltration within the ADM specimens pretreated with GM6001 was significantly less than that found in control specimens both at 14 (139 versus 243 cells, p=0.008) and 21 days (75 versus 108 cells, p=0.002). There was no evidence of neovascularity within any of the specimens. The basement membrane thickness of the specimens cultured with wild-type fibroblasts (15.95 μ m) was significantly less than those cultured with GM6001 (19.85 μ m, p<0.001), MMP2-deficient fibroblasts (20.11 μ m, p=0.001) and also native Alloderm (22.64 μ m, p<0.001) **CONCLUSIONS:** The results from our in vitro experiments suggest that MMP2 may play an important role in the resorption of acellular human dermis. The addition of a broad spectrum protease inhibitor such as GM6001 appears to slow cellular penetration and matrix degradation in vivo and in vitro.

8:46 Discussion

HEAD & NECK SECTION MODERATORS: JAMES L. NETTERVILLE, MD*, NASHVILLE, TN DONALD T. WEED, MD*, MIAMI, FL

8:54 Sternohyoid Rotary Door Flap Reconstruction in Laryngopharyngeal Reflux Related Subglottic Stenosis

Thomas L. Kennedy, MD*, Danville, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss laryngopharyngeal reflux (LPR) as a cause of subglottic stenosis. Identify the key steps in performing a myocutaneous rotary door flap (RDF) for subglottic reconstruction and its advantages in the treatment of subglottic stenosis.

OBJECTIVES: Idiopathic subglottic stenosis is found in a subgroup of patients in which there is a female predominance and an association with laryngopharyngeal reflux. This manuscript discusses laryngopharyngeal reflux as a cause of subglottic stenosis and reviews the surgical and medical management. **STUDY DESIGN:** Retrospective chart review of patients with idiopathic subglottic stenosis and LPR treated with a myocutaneous rotary door flap. **METHODS:** Five patients were identified who were treated with RDF for subglottic stenosis. The charts were reviewed for possible causes of subglottic stenosis including laryngopharyngeal reflux. The effectiveness of the myocutaneous rotary door flap in the treatment of subglottic stenosis was reviewed. **RESULTS:** Five patients with idiopathic subglottic stenosis were identified that were successfully treated with a myocutaneous rotary door flap. All patients were female between the ages of 37 to 79 with a negative workup for laryngeal stenosis except for LPR. Symptoms of shortness of breath and stridor with exertion, lasting anywhere from 6 months to one year, were the presenting symptoms. The RDF procedure was performed without the use of an internal stent in all patients. Four patients were managed with a single staged procedure. All patients are asymptomatic with the longest patient six years out from surgery. **CONCLUSIONS:** LPR should be suspected and treated in the treatment of subglottic stenosis, especially females. The RDF is a reliable technique in the treatment of subglottic stenosis without the risk of recurrent laryngeal nerve injury.

9:02 Variables Predicting Distant Metastases in Thyroid Cancer

Jonathan R. Clark, MBBS, Toronto, ON Canada
S. J. Eski, MD, Toronto, ON Canada
Philip J. Lai, BSc, Toronto, ON Canada
Jeremy L. Freeman, MD, Toronto, ON Canada

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the factors which predict for the development of distant

metastases in differentiated thyroid cancer and prognostic variables.

OBJECTIVES: Distant metastases from thyroid cancer are uncommon and have a variable prognosis. We present a series of patients with distant metastatic thyroid cancer with the aim of determining which patients are at risk of developing distant metastases and to examine what are the significant prognostic variables. **STUDY DESIGN:** Retrospective chart review. **METHODS:** Retrospective review of 30 consecutive patients with distant metastases identified from our thyroid cancer database. The prevalence of distant metastases was 4.5% and the median follow-up of survivors was 12.7 years. The histological type was Hurtle cell carcinoma in three, follicular in three, papillary in 21 and five patients had focal areas of anaplasia either in the primary or in regional metastases. **RESULTS:** The cumulative survival for patients with distant metastases was 49.5% at 10 years and 12.9% at 20 years. The site of metastases was lung in 26, bone in 11 and brain in one patient, with 8 patients having multiple sites. The median time to diagnosis of distant metastases was 3 months. Variables that predicted for development of distant disease were male gender, increasing age, size of primary, extrathyroidal extension of tumor, regional metastases and elevated post-thyroidectomy thyroglobulin. Survival in patients with papillary or follicular carcinoma without distant disease was significantly better than those with distant metastases ($p < 0.001$). Variables which predicted poor outcome in patients with distant metastases on multivariate analysis were age > 45 years and histological type of thyroid cancer ($p = 0.017$). **CONCLUSIONS:** Although patients with thyroid cancer and distant metastases may live prolonged periods with disease, it does significantly impact on patient survival. Age remains an important variable in both predicting for development of distant metastases and also influences long-term survival in patients with existing distant metastases.

9:10 Minimally Invasive Thyroidectomy Using the Sofferman Technique

David J. Terris, MD*, Augusta, GA
Andre A. Bonnett, MD, Augusta, GA
Christine G. Gourin, MD, Augusta, GA
Edward A. Chin, MD, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the indications, efficacy and safety of performing thyroidectomy using a minimal access approach.

OBJECTIVES: Access to the thyroid compartment has traditionally been achieved by a Kocher incision followed by subplatysmal flap elevation and strap muscle retraction. A combination of novel access techniques were employed to allow minimally invasive removal of part or all of the thyroid gland. **STUDY DESIGN:** A prospective, nonrandomized evaluation of consecutive patients undergoing thyroidectomy. **METHODS:** A minimally invasive incision (d 6 cm) was used in concert with the Sofferman technique (transection of the strap muscles) and videoendoscopic assistance to perform hemi- or total thyroidectomy in eligible patients. Prospectively collected data include age, gender, pathology, incision length, duration of surgery, and complications. **RESULTS:** Forty-five patients underwent thyroidectomy between September 2003 and May 2004. There were 14 men and 31 women, with a mean age of 40.8 (range, 19-73). Twenty-nine of these patients were eligible for minimally invasive thyroidectomy (MITH) and 16 underwent conventional thyroidectomy. The mean incision length in the MITH cohort was 4.9 cm and for the conventional thyroidectomy patients it was 9.6 cm. The mean surgical time for a hemithyroidectomy was 117.9 minutes in the MITH group ($n=18$) and 149.4 minutes ($n=5$) for conventional thyroidectomy; for total thyroidectomy the surgical times were 137.2 minutes ($n=11$) and 184.3 minutes ($n=11$), respectively. There were no cases of permanent hypocalcemia or recurrent laryngeal nerve paralysis in either group. No patients in the MITH group had to be converted to a conventional thyroidectomy. The cosmetic results were excellent, although two patients described mild paraincisional discomfort and one patient in the MITH group developed a mildly hypertrophic scar which responded to triamcinolone injection. **CONCLUSIONS:** Minimally invasive thyroidectomy is safe in carefully selected patients and probably results in more rapid wound healing. The cosmetic result is superior to that achieved with conventional thyroidectomy.

9:18 Surgical Management of Nasopharyngeal Juvenile Angiofibroma With Intracranial Extension

Victor L. Schramm Jr., MD, Denver, CO
Mario J. Imola, MD DDS, Denver, CO

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the indications and outcome for surgical resection of nasopharyngeal angiofibroma with intracranial extensions

OBJECTIVES: To determine the efficacy of applying craniofacial-skull base surgery techniques for the resection of nasopharyngeal angiofibroma extending intracranially. **STUDY DESIGN:** Retrospective analysis of 20 patients found to have intracranial extension of nasopharyngeal managed by the same surgeon at a tertiary care hospital facility. **METHODS:** The clinical and hospital records, pathology and radiographs of 20 patients with nasopharyngeal angiofibroma were reviewed. Follow-up information was obtained from clinical observation and from our tumor registry. **RESULTS:** Twenty patients were treated between 1982 and 2002 with combined transoral-transpalatal and lateral preauricular skull base resection. The temporomandibular joint contents were transposed in 12 patients and 3 had a limited contralateral external ethmoid approach. The intracranial extensions eroded bone, trigeminal nerve, compressed the cavernous sinus and involved the dura but were removed without need for other therapy. Blood replacement ranged from 2-5 units (mean 3) and was unaffected by pre-operative tumor embolization. Temporary 6th and 7th cranial nerve paralysis was noted in 5 patients. Trigeminal nerve branch resection was required in 10 patients. Functional and cosmetic sequelae has been limited to atrophy of the temporales muscle and an open jaw shift toward the operative side with normal occlusion. All patients are currently free of disease (mean follow up 8 years) though two have required secondary resection of a buccal persistence. **CONCLUSIONS:** It is appropriate to treat intracranial extensions of nasopharyngeal angiofibroma surgically utilizing skull base operative techniques. Angiography and embolization may be unnecessary. Cosmetic and functional outcomes are improved by avoiding facial incisions and condylectomy

9:26 Everolimus Inhibition of MCA 205 Sarcoma Tumor Growth: A Murine Model

Philip D. Knott, MD, Cleveland, OH
Hidemasa Pamai, MD, Cleveland, OH
Keiji Shimizu, MD, Cleveland, OH
Olivia Dan, BA, Cleveland, OH
Marshall Strome, MD MS*, Cleveland, OH
Suyu Shu, PhD, Cleveland, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss a murine sarcoma model and understand the implications of combined tumor suppressive and immunosuppressive efficacy of everolimus in the setting of laryngeal reconstruction.

OBJECTIVES: Everolimus (RAD), a derivative of the immunosuppressant rapamycin, has been shown to prevent acute rejection in the rat laryngeal transplant model. This study was undertaken to investigate the tumor suppressive efficacy of everolimus at laryngeal allograft sparing doses. **STUDY DESIGN:** A dose efficacy study employing a murine sarcoma model. **METHODS:** Forty-five 10 week old inbred C57 BL-6 mice underwent subcutaneous inoculation of 1×10^6 MCA 205 sarcoma cells. On the third post-inoculation day the mice were divided into 4 treatment groups undergoing daily gavage with everolimus 0, 0.2, 1.0, and 5.0 mg/kg/day. On the 13th post-inoculation day all treatment was discontinued. Mean tumor size was measured every 2 days during treatment, and biweekly until sacrifice on the 31st post-inoculation day. Mean whole blood trough levels (C_{min}) of everolimus were measured for each group. **RESULTS:** Mice treated with 1 and 5 mg/kg/day of everolimus experienced significant inhibition of tumor growth between the 7th and 23rd post-inoculation days ($p < 0.0001$) with an approximate 50% reduction in mean tumor size. Treatment with 0.2 mg/kg/day of everolimus was not associated with a significant difference in mean tumor size when compared with controls. Mean tumor suppressive whole

blood Cmins for the 1 and 5 mg/kg/day groups were 75.6 and 368.9 ng/ml, respectively. **CONCLUSIONS:** Treatment with 1 and 5 mg/kg/day of everolimus was associated with a significant reduction in mean tumor size among mice inoculated with MCA 205 sarcoma cells. Mean effective tumor suppressive concentrations of everolimus ranged from 75.6 to 368.9 ng/ml.

9:34 Chemoradiation Induced Cell Loss in Adult Human Submandibular Glands

Christopher A. Sullivan, MD, Boston, MA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the features of chemoradiation damage to human salivary glands and to discuss a novel approach to the treatment of chemoradiation induced xerostomia.

OBJECTIVES: Chemoradiation induced xerostomia affects approximately 40,000 head and neck cancer patients annually in the United States. No human histopathologic or cytochemical data exists that characterizes chemoradiation related salivary gland damage. The objective of this study was to describe the histopathologic and cytochemical features of the non-acute phase of human submandibular gland damage after chemoradiation therapy. **STUDY DESIGN:** Case control clinicopathologic study. **METHODS:** Pathology slides and cell blocks were obtained from patients who had undergone neck dissection after protocol driven chemoradiotherapy for stage IV head and neck cancer at a tertiary head and neck cancer institute. Histologic and cytochemical analyses were performed on representative sections of chemoradiated submandibular glands and findings were compared to age and sex matched, untreated control glands. **RESULTS:** Forty patients were identified who had undergone neck dissection an average of eight weeks after treatment with induction chemotherapy and chemoradiation therapy for nonoral head and neck cancer. In the chemoradiated glands light microscopic findings included decreased numbers of acinar cells, interstitial edema, vacuolization, fibrosis, and loss of granules in the convoluted tubules when compared to controls. Microvascular density was unaffected by chemoradiation; cytokeratin staining showed no change in ductal epithelium when compared to controls. **CONCLUSIONS:** Non-acute changes seen in human submandibular glands after chemoradiation therapy are compared to those seen in previously described irradiated animal models. Primary dysfunction in humans appears to be related to a reduction in function and number of submandibular gland acinar cells. The ductal system appears unaffected by chemoradiation therapy. Implications for management of xerostomia are discussed.

9:42 Discussion

9:50 Poster Award Presentations

Stephen J. Wetmore, MD*, Morgantown, WV
Paul R. Lambert, MD*, Charleston, SC

10:00 Break With Exhibitors

10:30 Predictive Factors for Posterior Triangle Metastasis: A Retrospective Review

Chad M. McDuffie, MD, Shreveport, LA
Nazanin Amirghahari, PhD, Shreveport, LA
Gloria Caldito, PhD, Shreveport, LA
Luke Thompson, Shreveport, LA
Timothy S. Lian, MD, Shreveport, LA
Cherie-Ann O. Nathan, MD*, Shreveport, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the factors which influence the metastasis of squamous cell carcinoma to the posterior triangle of the neck.

OBJECTIVES: Surgical modifications sparing uninvolved structures such as the spinal accessory nerve have been implemented since the advent of the radical neck dissection. The increased morbidity to the spinal accessory nerve involved with the dissection of level V lymph nodes has led to much controversy. In this study, we examine the incidence of nodal metastasis to all nodal levels involved with upper aerodigestive squamous cell carcinoma and attempt to determine factors predictive of level V nodal metastasis. **STUDY DESIGN:** Retrospective chart review. **METHODS:** A retrospective review on all pathology reports obtained from patients that underwent a radical or modified radical neck dissection between 1996 and 2003 from two institutions. Statistical analyses were performed to determine clinical and pathological factors that were significantly associated with level V metastasis. **RESULTS:** 79 patients with a total of 94 neck dissections were analyzed. The prevalence of level V metastasis was 7.4%. Multivariate analysis found that positive lymph nodes involving levels II, III, and IV was the only independent significant factor for level V metastasis ($p = 0.001$). **CONCLUSIONS:** Our study is in concordance with the literature, in revealing a low prevalence of level V metastasis. Our study goes further to suggest that if levels II, III, IV are found to be positive intraoperatively, then dissection of level V should be performed. Otherwise, the dissection of level V is not warranted and may lead to added morbidity to the spinal accessory nerve.

10:38 Lymph Node Metastases in Cutaneous Squamous Cell Carcinoma: A Prospective Evaluation

Brian A. Moore, MD, Houston, TX
Randal S. Weber, MD*, Houston, TX
Victor Prieto, MD, Houston, TX
Xian Zhou, MS, Houston, TX
J. Jack Lee, PhD, Houston, TX
Gary L. Clayman, DDS MD, Houston, TX

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate an understanding of the incidence, presentation, and associated findings of lymph node metastases in cutaneous squamous cell carcinoma of the head and neck. Participants should be able to discuss contemporary treatment philosophies and understand the prognostic implications of this finding.

OBJECTIVES: Cutaneous squamous cell carcinoma (CSCC) has been reported to metastasize to parotid and cervical lymphatics. The associated clinical and histopathologic findings of these nodal metastasis have not been prospectively investigated. **STUDY DESIGN:** Prospective, longitudinal analysis of patients with CSCC at a comprehensive cancer center. **METHODS:** Eligible patients with CSCC of the head and neck were consecutively enrolled in a prospective database from July 1996 through June 2001; this cohort was then followed to the key endpoints of recurrence and mortality. **RESULTS:** Two hundred ten patients were enrolled, and 12.9% were found to have clinical or pathologic evidence of lymph node metastases in either the parotid gland or neck. Median follow-up was 18.3 months in patients with lymph node metastases and 22 months in patients with no evidence of metastases. Nodal metastases were significantly associated with recurrent lesions ($p = 0.05$) and the following features: lymphovascular invasion ($p = <0.0001$), extracapsular extension ($p = <0.0001$), a positive margin ($p = <0.0001$), poorly differentiated histology ($p = <0.0001$), deep invasion into the subcutaneous tissues ($p = 0.011$), perineural invasion ($p = 0.035$), and larger size ($p = 0.0004$). At the conclusion of the study period, 33.3% of patients with nodal metastases developed recurrent disease and 18.5% died of their disease, compared to 15.3% of patients without lymph node spread who recurred and 11.1% who died of disease ($p = 0.027$). **CONCLUSIONS:** Lymph node metastases from cutaneous squamous cell carcinoma are common and are associated with a diminished recurrence-free survival. The presence of nodal spread often occurs in the setting of other adverse histopathologic findings, and we recommend aggressive treatment of the parotid and neck in these situations.

10:46 THIRD PRIZE - LLOYD STORRS RESIDENT RESEARCH AWARD

Utilization, Accuracy, and Implications for Patient Management of [18F]-2-Fluorodeoxyglucose-Positron Emission/Computerize Tomography (PET/CT) for Head and Neck Tumors

Adam M. Zanation, MD+, Chapel Hill, NC
David D. Sutton, MS, Chapel Hill, NC
Carol G. Shores, MD PhD, Chapel Hill, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the difference between PET and PET/CT scanning, understand the evidence behind the utilization and accuracy of PET/CT for head and neck tumors, and discuss the implications of PET/CT results in patient management decisions.

OBJECTIVES: Positron emission tomography (PET) has shown promise for early cancer detection and accurate staging of cancer patients, and a limited number of studies suggest PET/CT may improve these variables; however, no published study has specifically evaluated PET/CT for head and neck tumors. The current study evaluates the utilization, accuracy, and implications for patient management of PET/CT scans in patients with head and neck (HN) tumors. **STUDY DESIGN:** Retrospective cohort outcomes study at a tertiary care center. Multiple regression analysis was performed. **METHODS:** The authors identified 795 consecutive PET/CT scans during the first year of utilization of the PET/CT scanner at our institution. A total of 113 were obtained for HN tumors. Accuracy, utilization, and implications for patient care management decisions were correlated with each PET/CT scan. **RESULTS:** Accuracy, sensitivity, and specificity were measured by comparing the PET/CT results at the primary tumor site, cervical node sites, and distant sites to either pathologic or definitive clinical diagnoses. PET/CT had an overall per scan accuracy of 69% and per patient accuracy of 72%. When stratification for etiology of obtaining the scan was performed, per scan accuracy of 80% staging distant disease, 58% primary tumor evaluation, 68% recurrence evaluation and 60% unknown primary accuracy was obtained. **CONCLUSIONS:** PET/CT is a promising tool for head and neck tumors; however, in clinical practice the proper utilization of such technology is not well studied. In our study PET/CT had an overall accuracy of 69% in evaluating HN tumors; and PET/CT had the most accuracy in aiding in the detection of distant metastasis.

10:56 Validation of Ultrasonography to Evaluate Murine Orthotopic Oral Cavity Tumors

John C. Pezold, MD+, Birmingham, AL
Melissa A. Talbert, BS, Birmingham, AL
Kurt R. Zinn, DVM PhD, Birmingham, AL
Renee A. Desmond, PhD, Birmingham, AL
Eben L. Rosenthal, MD, Birmingham, AL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to compare the use of ultrasonography versus serial histologic measurement to evaluate tumor growth and invasion.

OBJECTIVES: The murine orthotopic oral cavity tumor model has been found to be an ideal animal model for evaluating tumor growth and invasion. Currently, serial measurements of tissue growth are difficult to obtain since sacrifice of the model is necessary to evaluate tumor size. High resolution ultrasound was evaluated as a method to monitor tumor size in vivo. **STUDY DESIGN:** Prospective study. **METHODS:** Sixteen immunodeficient mice, age nine weeks, were injected transcervically with human squamous cell carcinoma cell line (FADu) into the tongue, and tumor volume was assessed by high frequency ultrasound at 11 days. The animals were then sacrificed and tumor volume was calculated by caliper measurement. **RESULTS:** Tumor volume obtained using ultrasound were found to significantly correlate with histologic measurements (Pearson coefficient 0.90, $p < 0.0001$). Tumor volume measurements on average were larger using ultrasound versus histologic measurements although this was not significantly different than zero (95% confidence interval -13.96 to 62.37). **CONCLUSIONS:** High resolution ultrasound accurately measures tumor volume in the murine orthotopic oral cavity tumor model without sacrifice.

11:04 Discussion

GENERAL SECTION

MODERATOR: SAMUEL R. FISHER, MD*, DURHAM, NC

11:12 Safety of Simultaneous Bilateral Posterior Cricarytenoid Muscle Botulinum Toxin Injections for the Treatment of Abductor Spasmodic Dysphonia

Benjamin C. Stong, MD+, Atlanta, GA
John M. DelGaudio, MD, Atlanta, GA
Edie R. Hapner, PhD, Atlanta, GA
Michael M. Johns III, MD*, Atlanta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss spasmodic dysphonias and the efficacy of current treatment modalities for the abductor type. They should also be able to discuss the safety of using simultaneous bilateral posterior cricoarytenoid muscle botulinum toxin injections for treatment.

OBJECTIVES: Traditionally, simultaneous bilateral posterior cricoarytenoid muscle (PCA) botulinum toxin (BT) injection for the treatment of abductor spasmodic dysphonia is avoided in favor of unilateral injections, due to airway concerns. The purpose of this paper is to review the safety and major and minor complications of simultaneous bilateral PCA BT injections. **STUDY DESIGN:** This study is a retrospective case series review. **METHODS:** Twenty (20) patients were reviewed who received a total of 99 simultaneous bilateral PCA injections (198 muscles) over six (6) years. **RESULTS:** There were no major complications. Minor complications were self-limited. There was a 5% incidence of dyspnea with exertion and a 2% incidence of dysphagia. The total cumulative bilateral BT injection doses ranged from 2.5 to 7.5 units. The average dose at which dyspnea and dysphagia occurred was 4.97 and 5.56 units respectively, and the average median cumulative bilateral dose was 4.69 units. **CONCLUSIONS:** This case series demonstrates that simultaneous bilateral PCA BT injections are safe up to a cumulative bilateral dose of 7.5 units, and that complications are consistent with those previously reported. Further studies on vocal outcome measures compared to traditional injection protocols are needed to determine if simultaneous bilateral PCA BT injections are as efficacious as traditional injection protocols for the treatment of abductor spasmodic dysphonia.

11:20 Long-Term Effects of Micronized AlloDerm Injection for Unilateral Vocal Fold Paralysis

Claudio F. Milstein, PhD, Cleveland, OH
Douglas M. Hicks, PhD, Cleveland, OH
Tom I. Abelson, MD, Cleveland, OH
Marshall Strome, MD*, Cleveland, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should: 1) become familiar with the implementation of a relatively new injectable material for vocal fold augmentation; 2) be able to re-assess the role of Cymetra injection as a longer lasting surgical option for fold augmentation; and 3) be challenged to consider the use of phonatory function, perceptual voice evaluation and patient satisfaction components for surgical efficacy voice related studies.

OBJECTIVES: Injection laryngoplasty is a technique used for medialization of the vocal folds when glottal closure is inefficient, such as in unilateral vocal fold paralysis. Micronized AlloDerm (Cymetra TM) is a relatively new product used for vocal fold augmentation. Previous studies, evaluating the effectiveness of this product for both vibratory mechanics and voice performance, concluded that long-term effects are poor. The objective of the present study was to reassess the long-term effectiveness of Cymetra as an injectable material in patients with unilateral vocal fold paralysis. **STUDY DESIGN:** A prospective study was performed on 20 patients with unilateral vocal fold paralysis (70% left sided and 30% right sided) who have undergone a Cymetra injection. The procedure was performed on average at 43 months after initial onset of the vocal fold paralysis (range 4 to 216 months). **METHODS:** Voice samples, videostroboscopic examinations, a quality of life questionnaire (VRQOL), and a self-rating of vocal outcomes questionnaire were collected pre-operatively, and at the patients' last post-operative follow-up. Three voice experts arrived at a consensus to rate both vocal and vibratory function measures. **RESULTS:** The average follow-up time was 10.8 months (range 1 to 35 months). Fifteen patients maintained good results through final follow-up. The remaining five experienced loss of effectiveness, some requiring reinjection. Wilcoxon signed rank tests were used to test change from pre- to post-injection values for the group. Results showed significant post-operative improvement in voice quality ($p < 0.0001$), degree of glottal closure ($p < 0.0001$), and degree of vocal fold edge bowing ($p < 0.0001$). There was also significant improvement in both measures of quality of life, and in patients' self-perception of voice improvement ($p < 0.01$). **CONCLUSIONS:** The results of this study differ from previous reports on long-term effects of Cymetra and are promising. Overall, outcomes were rated from good to excellent, with improved phonatory function, vocal quality, and high patient satisfaction. These promising results will be illustrated through a multimedia presentation including video clips.

11:28 **Body Mass Index (BMI) and Laryngopharyngeal Reflux (LPR): Is There an Association?**

Stacey L. Halum, MD, Winston-Salem, NC
Gregory N. Postma, MD, Winston-Salem, NC
Crawford Johnston, BS, Winston-Salem, NC
Peter C. Belafsky, MD PhD, Sacramento, CA
Jamie A. Koufman, MD*, Winston-Salem, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the relationship between obesity and laryngopharyngeal reflux.

OBJECTIVES: Previous studies have demonstrated obesity to be associated with gastroesophageal reflux (GER) disease. Based on GER-related studies, many physicians assume laryngopharyngeal reflux (LPR) is also associated with obesity and they counsel patients accordingly. In light of the many differences between LPR and GER, this assumption is not necessarily valid without adequate investigation. The aim of this study was to determine if there is a positive association between LPR and body mass index (BMI). **STUDY DESIGN:** The study involved a retrospective review of the last 500 pH probe study reports performed within the department. **METHODS:** Studies performed on antireflux medications or after fundoplication were excluded. From the included study reports, age, sex, height, weight, use of tobacco or alcohol, and pharyngeal and esophageal probe findings were recorded. While controlling for other factors (age, sex, tobacco, and alcohol use), statistical analysis was performed to see if significant associations exist between pharyngeal reflux events ($pH < 4$ and/or $pH < 5$) and BMI. **RESULTS:** Two hundred and ninety-seven of the last 500 pH probe studies met inclusion criteria. Patients included 196 females and 101 males, with a mean patient age of 49 years. Neither the mean number of pharyngeal reflux episodes $pH < 4$ nor the mean number of pharyngeal reflux episodes $pH < 5$ were associated with elevated BMI (> 30). In contrast, both the total number of esophageal reflux episodes ($pH < 4$) and mean esophageal time with $pH < 4$ were strongly associated with elevated BMI (> 30). **CONCLUSIONS:** This study demonstrates that obesity, as defined by a BMI > 30 , is not positively associated with LPR. This may have implications in regards to LPR dietary and behavioral counseling.

11:36 **Ankyloglossia: Maternal Assessment of Breast-Feeding Benefits of Frenulotomy**

William C. Giles, MD*, Columbia, SC
Penny S. Stanley, MD, Lexington, KY

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the presenting symptoms of a clinically significant ankyloglossia in an infant and expected results from a frenulotomy.

OBJECTIVES: Ankyloglossia has been associated with breast-feeding difficulties. Occasionally a physician will ask that a tongue be released in order to improve an infant's breast-feeding. The objective of this study is to review and evaluate the outcome of such cases. **STUDY DESIGN:** A retrospective analysis of 13 infants who underwent release of tongue was undertaken. Maternal discomfort, inability to latch to the nipple, and ineffective feeding were to varying degrees the presenting symptoms of the infants identified by a physician or lactation nurse as needing intervention. Maternal questionnaires were utilized to measure clinical response to these clinical symptoms. **METHODS:** The identified infants underwent simple frenulotomy under local anesthesia while in the hospital nursery or in an office setting. **RESULTS:** According to the mothers' judgment: maternal pain lessened in 9/13 cases, ability to latch to the nipple improved in 12/13 cases and breast feeding improved in all cases. No complications or parental complaints regarding the procedures were identified. **CONCLUSIONS:** A simple frenulotomy in infants with ankyloglossia and feeding problems appears to be beneficial.

11:44 **The High Risk Tracheostomy: Exploring the Limits of the Percutaneous Tracheostomy**

Daniel R. Blankenship, MD, Augusta, GA
Christine G. Gourin, MD, Augusta, GA
Brian D. Kulbersh, BS, Augusta, GA
Amy R. Blanchard, MD, Augusta, GA
David J. Terris, MD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the value and safety of performing percutaneous tracheotomies on patients deemed to be in a high risk group.

OBJECTIVES: Modifications of the percutaneous tracheostomy (PercTrach) technique have made this a straightforward and safe procedure in appropriately selected patients. We sought to determine its value in high risk patients. **STUDY DESIGN:** Prospective, non-randomized controlled study at an academic health center. **METHODS:** A consecutive series of PercTrachs was performed; the patients were prospectively identified as being high risk if they were morbidly obese (BMI > 35) or coagulopathic (INR > 1.5 , platelets $< 50,000$, systemic heparinization); all other patients were considered low risk. Acute Physiology and Chronic Health Evaluation (APACHE) scores were assigned. The PercTrachs were performed under bronchoscopic guidance using the Blue Rhino introducer set in collaboration with the pulmonary critical care team. **RESULTS:** Forty-one consecutive patients were included in the study; the high-risk patients ($n=18$) were slightly younger than the low-risk ($n=23$) patients (50.4 vs. 51.6 years, respectively), but had significantly higher APACHE scores (9.3 vs. 4.7, $p=0.0001$). The seven morbidly obese patients had a mean BMI of 57.3, with a weight of 169.2. There were 9 coagulopathic patients (7=INR of > 1.5 , 2=heparin drip, 1=platelet count $< 20,000$). The procedural times ranged from 7 to 25 minutes. The high-risk PercTrachs took 13.7 ± 4.6 minutes on average, compared with 12.8 ± 3.8 minutes in the low-risk group ($p=0.532$). One patient in the high-risk group bled from an anterior jugular communicating vein injury, requiring wound exploration and vein ligation. There were no other significant complications. **CONCLUSIONS:** PercTrachs may be performed safely even in high risk patients, such as those with morbid obesity and coagulopathy.

11:52 **Discussion**

12:00 PANEL: FRONTAL SINUS PROBLEM SOLVING
MODERATOR: Frederick A. Kuhn, MD*, Savannah, GA
PANELISTS: Roy Casiano, MD*, Miami, FL
Andrew Lane, MD, Baltimore, MD
Joseph K. Han, MD, Charlottesville, VA
Boris I. Karanfilov, MD, Columbus, OH

12:55 Announcements and Adjournment

POSTERS

- 1. Airway Obstruction Secondary to Tracheobronchial Involvement of Asymptomatic Undiagnosed Crohn's Disease in a Pediatric Patient**
Khwaja A. Ahmed, MD, Memphis, TN
Jerome W. Thompson, MD MBA, Memphis, TN
R. E. Joyner, MD, Memphis, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to recognize the clinical picture consistent with tracheal Crohn's disease and have a heightened awareness of this rare diagnosis.

OBJECTIVES: To present a rare case of Crohn's disease involving the trachea with progressive inflammation warranting the placement of a tracheotomy in a 9 year old. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** A 9 year old female presented to the emergency room with a 2 week history of progressively frequent episodes of shortness of breath and stridor. The symptoms would respond to inhalational steroids and immediately recur after discontinuation. The patient denied any history of abdominal pain or diarrhea. Bronchoscopy revealed diffuse hemorrhagic tracheitis, and a follow-up bronchoscopy one week later revealed progressive, severe airway edema, necessitating an urgent tracheotomy. A tracheal biopsy was positive for granulomatous disease, but an exhaustive investigational workup failed to reveal an underlying diagnosis. **RESULTS:** An inflammatory bowel disease ELISA assay indicated elevated levels of Anti-OmpC IgA and was negative for ASCA IgA and IgG, the results of which are consistent with a diagnosis of Crohn's disease. A subsequent colonoscopy confirmed the diagnosis of Crohn's disease. While there are documented case reports describing airway obstruction secondary to tracheobronchial involvement of Crohn's disease, these cases did not involve a previously undiagnosed asymptomatic patient, nor did they describe it occurring in a pediatric patient. **CONCLUSIONS:** Tracheal involvement of Crohn's disease is extremely rare and can present with airway obstruction in any age group, including the pediatric patient. The otolaryngologist must be aware of this entity in order to be able to establish the diagnosis in future.

- 2. Impact of Comorbidity and Quality of Life on Treatment Selection in Patients With Squamous Cell Carcinoma of the Head and Neck**
Christine G. Gourin, MD, Augusta, GA
William J. McAfee, BS, Augusta, GA
Kimberly M. Neyman, BS, Augusta, GA
Linda T. Jones, BSN, Augusta, GA
David J. Terris, MD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the use of quality of life measures and comorbidity in the pretreatment evaluation of patients with head and neck cancer.

OBJECTIVES: Overall survival and functional outcome following treatment of head and neck cancer are significantly associated with comorbidity and patient perception of quality of life (QOL). We sought to determine if comorbidity and pretreatment QOL scores influenced treatment selection in patients with squamous cell cancer (SCC) of the head and neck. **STUDY DESIGN:** Nonrandomized, retrospective patient analysis. **METHODS:** The medical records of all patients diagnosed with head and neck SCC who participated in pretreatment QOL analysis over a 15 month period were retrospectively reviewed. Patients with a history of prior treatment for head and neck cancer, recurrent disease, and nonsquamous neoplasms were excluded. Records were analyzed for demographic data, tumor specific characteristics, and choice of treatment modality. The University of Washington (UW) QOL questionnaire, Performance Status Scale (PSS), and Karnofsky score were used to measure pretreatment QOL. Comorbidity was graded using the Modified Medical Comorbidity Index. **RESULTS:** Of 75 patients who met study criteria, 32 underwent primary surgical therapy and 43 were referred for nonoperative (radiation or chemoradiation) therapy. Treatment groups did not differ with respect to patient demographics, tumor characteristics, or comorbidity grade. There was no significant difference in UW QOL individual or global scores, PSS scores, or Karnofsky scores between treatment groups. No significant association was found between comorbidity grade and pretreatment QOL scores. **CONCLUSIONS:** Pretreatment QOL and comorbidity grade do not appear to influence treatment selection in patients with head and neck SCC. The effect of pretreatment QOL and comorbidity on post-treatment QOL is currently under investigation.

- 3. 'Vertex-to-Floor' Head Position Delivers Topical Nasal Drops to the Olfactory Cleft in Normal Volunteers**
Steven B. Cannady, MD, Cleveland, OH
Pete S. Batra, MD, Cleveland, OH
Martin J. Citardi, MD, Cleveland, OH
Donald C. Lanza, MD, Cleveland, OH

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the distribution pattern of nasal medications in the 'head down forward' position and compare and contrast it to other head positions and delivery mechanisms.

OBJECTIVES: To evaluate the efficacy of the vertex to floor (VF) head position on normal volunteers compared to FESS patients. **STUDY DESIGN:** Prospective clinical trial. **METHODS:** Three trials were performed: two trials in which patients maintained the VF position for one and five minutes, respectively, after drop administration were compared to a third trial utilizing an atomizer spray in the upright position. Two independent observers rated the distribution of fluorescein-dyed dexamethasone drops in normal volunteers at six subsites: anteromedial (AM), anterolateral (AL), middle meatus (MM), sphenoethmoid recess (SER), posterior choana (PC), and olfactory cleft (OC). **RESULTS:** VF position consistently delivered nasal drops to all six subsites in normals (AM, AL, MM, SER, PC, and OC). The OC was not reached by the atomizer spray. The greatest difference was noted at the OC with nasal drops superior to spray (paired t-test, P=0.014). Nasal spray was significantly more distributed at AM and AL sites on deviated compared with open sides (P=0.013 and 0.010 respectively). Comparison of normal subjects to postop patients revealed the VF position delivers greater concentrations to the OC after surgery (P=0.007). **CONCLUSIONS:** The VF position was effective in delivery of the dexamethasone drops to the paranasal sinuses, especially to the olfactory cleft in normal volunteers. This head position has significant implications for management of pre- and post-operative patients suffering from hyposmia or anosmia with recalcitrant chronic rhinosinusitis and/or sinonasal polyposis.

- 4. The Efficacy of Hydroxyapatite Cement in Cranial and Skull Base Reconstruction**
Peter J. Catalano, MD, Burlington, MA
Ellen E. Choi, BS, Burlington, MA (Presenter)

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the various indications and contraindications for hydroxyapatite reconstruction in skull base, neurotologic, otologic procedures.

OBJECTIVES: Hydroxyapatite (HA) cement is a biosynthetic compound designed to repair cranial defects and seal cerebrospinal fluid (CSF) leaks. Product improvements include "quick set" formulas which are much more stable in "wet" environments, as encountered in skull base surgery. It has been suggested that the use of HA cement increases risk of post-operative infection. We hypothesize that HA cement, when used properly, is a safe and effective material for skull base reconstruction. **STUDY DESIGN:** Retrospective chart review. **METHODS:** The charts of 50 patients who underwent skull base surgery for resection of neoplasms, repair of cranial defects, and repair of CSF fistulas were reviewed. The amount of HA used per case ranged from 1 to 95 grams. Follow-up ranged from 6 to 24 months. **RESULTS:** 96% (48/50) of patients had successful repair of cranial defects using HA with no evidence of post-operative infection. 2/50 had post-operative wound breakdown and localized abscesses. Both patients had been previously radiated; one developed an oral fistula communicating with the surgical site, while the other patient developed chronic mastoiditis and non-healing skin ulcers following radiation and multiple excisions of skin neoplasms. The amount of HA used did not correlate with post-operative infection. **CONCLUSIONS:** In the absence of pre-operative radiation, HA is a safe and effective biomaterial to use in repair of cranial and skull base defects. Minimal amounts are required to seal the majority of CSF leaks and repair cranial base defects.

5. Duplication Cyst of the Tongue

Vinaya Chakradeo, MD, Shreveport, LA
Timothy S. Lian, MD, Shreveport, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the presentation, workup, management, as well as the embryological basis for the development of duplication cysts of the tongue.

OBJECTIVES: To present a case of duplication cyst of the tongue including the workup and surgical management. **STUDY DESIGN:** Case report and review of pertinent literature. **METHODS:** Case of a 6 week old female infant with a progressively enlarging ventral tongue mass is presented. Literature, obtained via a Medline search, relevant to duplication cysts is reviewed. **RESULTS:** A cystic mass measuring 1.5x 0.5x 0.4 cm involving the ventral aspect of the tongue in the midline was excised. Histopathological analysis revealed a duplication cyst of the tongue. Post-operatively the patient was without functional deficits or recurrence. **CONCLUSIONS:** Duplication cysts of the tongue are best treated by complete surgical excision with post-operatively expectations of full tongue function and no recurrence. Though rare, duplication cyst should be considered in the differential diagnosis of pediatric oral cavity masses.

6. Laryngeal Blastomycosis Mimicking Carcinoma

Anton Chen, MD, Nashville, TN
Robert H. Ossoff, DMD MD*, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to identify laryngoscopic and histopathologic features of laryngeal blastomycosis as well as discuss its surgical and medical management.

OBJECTIVES: Laryngeal blastomycosis is an uncommon fungal infection which may resemble carcinoma in its insidious clinical course and laryngoscopic appearance. The goal of this case report is to increase the awareness for this disease by presenting its clinical features, including histopathology and laryngeal photodocumentation before and after antifungal treatment. A brief critical review of the literature, including surgical and medical management, will be discussed. **STUDY DESIGN:** Case report. **METHODS:** The authors present a case report from a tertiary academic voice center, including the history, otolaryngologic exam, videostroboscopy, histopathology, and microbiologic cultures. **RESULTS:** A 78 year old nonsmoking gentleman presented with persistent hoarseness for 8 months. His history and laryngoscopic findings were initially concerning for laryngeal carcinoma. He subsequently underwent direct microlaryngoscopy with biopsy, and histopathologic evaluation led to the diagnosis of laryngeal blastomycosis. After infectious disease consultation, he began a course of oral voriconazole and on follow-up had improvement in his voice and laryngoscopic exam. **CONCLUSIONS:** Laryngeal blastomycosis is a diagnostic challenge because it is both uncommon and may mimic carcinoma in its clinical course and laryngoscopic features. Accurate histopathologic evaluation is critical for differentiating blastomycosis from carcinoma and for determining the appropriate treatment plan.

7. How Often Is Tonsillectomy Performed After Adenoidectomy?

Jenny L. Cross, MD+, Morgantown, WV
Ronald L. Wilkinson, MD, Charleston, WV
Hassan H. Ramadan, MD*, Morgantown, WV

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain to a patient who is to undergo an adenoidectomy the likelihood of subsequently undergoing a tonsillectomy at a later date and be familiar with current indications for both adenoidectomy and tonsillectomy.

OBJECTIVES: To answer the question: How often do we have to perform a tonsillectomy when an adenoidectomy has previously been performed? **STUDY DESIGN:** A retrospective chart review was undertaken of all patients having undergone an adenoidectomy at the authors' institution from the years 1996 to 2001. **METHODS:** Only patients with at least an opportunity for a 3 year follow-up were considered. Patient's records were reviewed to determine if a subsequent tonsillectomy was performed. An analysis was performed to determine if there was an increased incidence in children under age 3 who had undergone subsequent tonsillectomy. **RESULTS:** Four hundred and fifty cases of adenoidectomies were identified with follow-up on average of 19 months. Fifty-three children subsequently underwent tonsillectomies. The average time between adenoidectomy and tonsillectomy was 23 months. There were 98 (22%) adenoidectomies performed in children under 3 years old and 22 had subsequent tonsillectomies (22%). For the remaining 352 (78%) cases of children over age 3, 31 of these had subsequent tonsillectomies (7%). This is an average of 1 in 11 (9%). If a patient had an adenoidectomy at an age under 3, they were 40% more likely to have had a subsequent tonsillectomy than a child who had an adenoidectomy at an age over 3. Chi square analysis showed this to be significant with a p-value of 0.01. **CONCLUSIONS:** Tonsillectomy and adenoidectomy are two distinct procedures with separate indications, and they are performed concurrently only when the specific indications for each coexist.

8. Nodular Fasciitis: A Case Report of the Rare Periosteal Type in the Mandible of a Child

Jenny L. Cross, MD, Morgantown, WV
Hassan H. Ramadan, MD*, Morgantown, WV

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the incidence of nodular fasciitis and be aware of its clinical and histologic features.

OBJECTIVES: Nodular fasciitis is a common pathologic entity in the limbs of adults but rare in the head and neck of children. In spite of having been previously well described, its behavior, histology and scarcity of cases can lead to a misdiagnosis leading to unnecessary radical treatment. This paper addresses the epidemiology, etiology, clinical aspects, histology and treatment of NF to familiarize the clinician. **STUDY DESIGN:** The authors performed a review of the literature and prepared a case report. **METHODS:** A case report. **RESULTS:** We describe the first case of periosteal nodular fasciitis to be reported in the mandible of a child. A 5 year old female was

initially seen with a rapidly enlarging submandibular mass which appeared radiographically and clinically to be adherent to the mandible with bony erosion. No other symptoms were noted. Excisional biopsy revealed a 4.5 cm mass which histologically demonstrated nodular fasciitis. There has been no evidence of recurrence 7 months postoperatively. **CONCLUSIONS:** Nodular fasciitis is rare in the head and neck region especially in children. However, it should be remembered in the differential diagnosis of head and neck tumors to avoid unnecessary radical treatment as it can easily be confused with malignancy.

9. Cochlear Implantation in Pediatric Patients with Waardenburg Syndrome

Robert D. Cullen, MD, Chapel Hill, NC
Carolyn J. Brown, MS, Chapel Hill, NC
Holly F. Teagle, MA, Chapel Hill, NC
Harold C. Pillsbury, MD*, Chapel Hill, NC
Craig A. Buchman, MD*, Chapel Hill, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe outcomes of pediatric patients with deafness due to Waardenburg syndrome after cochlear implantation.

OBJECTIVES: Waardenburg syndrome is an autosomal dominant syndrome characterized by dystopia canthorum, hyperplasia of the eyebrows, heterochromia irides, a white forelock and sensorineural hearing loss in 20-55% of patients. This patient population accounts for approximately 2% of congenitally deaf children. The purpose of the present study was to describe the outcomes for those children with Waardenburg syndrome that have undergone cochlear implantation. **STUDY DESIGN:** Retrospective case review. **METHODS:** Pediatric cochlear implant recipients with documented evidence of Waardenburg syndrome underwent retrospective case review. All patients received their cochlear implants at the study institution followed by outpatient auditory habilitation. Charts were reviewed for etiology and duration of deafness, age at time of cochlear implantation, perioperative complications, duration of use, and current age. Results of standard tests batteries for speech perception and production administered as a part of the patients' auditory habilitation were reviewed. **RESULTS:** Seven patients with Waardenburg syndrome and cochlear implants were identified. All of these patients are active users of their devices and perform very well following implantation. There were no major complications in this small group of patients. **CONCLUSIONS:** Children with congenital sensorineural hearing loss without other co-morbidities (e.g., developmental delay, inner ear malformations) perform well when they receive cochlear implantation and auditory habilitation. Patients with Waardenburg syndrome can be expected to have above average performance after cochlear implantation.

10. Liposarcoma of the Supraglottic Larynx

Jeffrey L. Cutler, MD, Nashville, TN
Lesley C. French, BS, Nashville, TN
Jeffrey S. Mueller, MD, Nashville, TN
Derrick T. Lin, MD, Nashville, TN
George L. Coppit, MD, Nashville, TN
James L. Netterville, MD*, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the clinical behavior, histopathology, treatment and prognosis of laryngeal liposarcomas.

OBJECTIVES: To present a case of a well differentiated liposarcoma involving the supraglottic larynx, including a discussion of the clinical behavior, histopathology, treatment and prognosis of laryngeal liposarcomas. **STUDY DESIGN:** Retrospective review of the hospital records and histopathology slides associated with this case and a search of the English language literature. **METHODS:** All clinical information and histopathologic documentation for this case were included for review. **RESULTS:** To date this report marks the 24th documented case of supraglottic laryngeal liposarcoma within the English language literature. The patient presented is a 54 year old male with a four month history of a neck mass who underwent an endoscopic resection of a supraglottic lesion, initially believed to be a benign lipoma. Permanent section analysis revealed a well differentiated liposarcoma, thus the patient subsequently underwent a partial supraglottic laryngectomy for tumor resection via a transcervical approach. Final pathology demonstrated a 6-cm well differentiated liposarcoma with negative margins. The patient remains disease free four months after the procedure. **CONCLUSIONS:** A review of the literature reveals that laryngeal liposarcomas are extremely uncommon. This case report documents a classic presentation of laryngeal liposarcoma with the supraglottic being the most common site. Well differentiated liposarcoma is often incorrectly diagnosed as a simple lipoma, emphasizing the importance of a high index of suspicion for accurate diagnosis. Given the high likelihood of recurrence, wide surgical excision is the treatment of choice, associated with less than 10% recurrence rate.

11. Langerhans' Cell Histiocytosis Presenting as a Pott's Puffy Tumor in a Child

Bryan M. Davis, MD, Nashville, TN
Shelagh A. Cofer, MD, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate understanding of specific clinical manifestations of Langerhans' cell histiocytosis in the head and neck and how this disease is diagnosed and classified.

OBJECTIVES: The purpose of this project is to report the clinical, radiographic and pathologic features of a patient with isolated Langerhans' cell histiocytosis presenting as a complicated frontal sinusitis. The nomenclature and typical presentation of Langerhans' cell histiocytosis in the head and neck will also be reviewed. **STUDY DESIGN:** A retrospective review of the medical chart, pathology slides and radiographic studies for this patient was performed. **METHODS:** An 11 year old patient presenting with Langerhans' cell histiocytosis of the frontal sinus was identified. Diagnosis was based on clinical and radiographic analysis and confirmed with pathological evaluation of the patients sinus contents. Eight month follow-up data is available. **RESULTS:** An 11 year old male presented with what was initially felt to be frontal sinusitis with overlying frontal bone osteomyelitis (i.e., Pott's puffy tumor). Diagnosis of Langerhans' cell histiocytosis was confirmed using pathological criteria defined by the Histiocyte Society. **CONCLUSIONS:** Langerhans' cell histiocytosis is defined by a pathological proliferation of histiocytes. While most patients with Langerhans' cell histiocytosis present with a manifestation of their disease in the head and neck, few patients present with clinical signs and symptoms of sinusitis. We present an interesting case of an 11 year old male with Langerhans' cell histiocytosis of the frontal sinus presenting as a Pott's puffy tumor. The nomenclature, clinical manifestations, diagnosis and treatment of this disease are reviewed.

12. The Medialized PE Tube—An Underreported Cause of CSOME

Bryan M. Davis, MD, Nashville, TN
Katherine A. Koepke, BS, Nashville, TN
Robert F. Labadie, MD PhD, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to evaluate more fully patients presenting with chronic serous otitis media with effusion (CSOME) and explain how foreign bodies lodged in the eustachian tube can cause this clinical entity.

OBJECTIVES: The purpose of this project is to report the clinical features of patients presenting with CSOME caused by a medial migration of pressure equalizing tubes

(PE tubes) deep into the middle ear or distally in the ET. **STUDY DESIGN:** A retrospective review of the medical charts of these patients. **METHODS:** Four cases of CSOME caused by a medial migration of PE tubes were identified. In 2 patients the PE tube was distally located within the eustachian tube. Radiographic studies were performed and file records were reviewed. Follow-up was available for all patients and ranged between 2 to 17 (mean 14) months. **RESULTS:** Patients presenting with CSOME and a medialized PE tube underwent middle ear exploration and removal of the foreign body. In all cases there was an impressive foreign body reaction, in either the middle ear or the ET, surrounding the retained PE tube. Removal of the medialized PE tube caused complete resolution of all symptoms and signs. **CONCLUSIONS:** Pressure equalizing tube placement is arguably the most common operation performed in the United States, often in children with CSOME. We propose that medialization of PE tubes leading to CSOME, while uncommon, occurs more frequently than our literature would indicate.

13. An Update in the Endoscopic Management of Benign Sinonasal Tumors

Alessandro de Alarcon, MD, Charlottesville, VA
Mark J. Jameson, MD PhD, Charlottesville, VA
Clifford D. Phillips, MD, Charlottesville, VA
Joseph K. Han, MD, Charlottesville, VA
Charles W. Gross, MD*, Charlottesville, VA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the endoscopic management of benign sinonasal tumor.

OBJECTIVES: 1) Describe the endoscopic management of benign sinonasal tumors; 2) demonstrate similar complication rates and recurrence rates to the published literature; 3) demonstrate that endoscopic management of benign sinonasal tumors is a viable alternative to external approaches. **STUDY DESIGN:** Retrospective chart review of patients undergoing endoscopic and external approaches to benign sinonasal tumors between 1990-1994 at an academic institution. **METHODS:** A retrospective chart review was performed identifying patients with benign sinonasal tumors treated at a university hospital between 1990 and 2004. Patients who were treated endoscopically as well as externally were examined. Their demographic data, surgical management, complications, recurrence rate, and length of follow-up were gathered. **RESULTS:** Of the 64 patients in the study, 62 patients were managed endoscopically and 2 were managed with external approaches (osteoplastic flap). Tumors identified: 35 inverting papillomas, 10 osteomas, 4 ossifying fibromas, 4 fibrous dysplasia, 4 pleomorphic adenomas, 1 ameloblastoma, 1 cholesterol granuloma, 2 meningiomas, 1 recurrent pituitary adenoma, 1 inflammatory pseudotumor, 1 lobular capillary hemangioma. 14/64 (22%) patients had a recurrence necessitating revision surgery. 13 were treated endoscopically and one externally with an osteoplastic flap. 11/14 patients with recurrence were inverting papilloma. 3 patients with inverting papilloma had a second recurrence. There were two complications (3.1%), 2 intraoperative CSF leaks which were repaired intraoperatively (1 osteoma, 1 inverting papilloma). The range of follow-up was 0.5 to 11 years with a median of 4.0 years. **CONCLUSIONS:** Endoscopic excision of sinonasal tumors is a viable alternative to the traditional external management. Recurrence rates and complications are similar to external approaches. The variety of sinonasal tumors with their natural clinical course should dictate the managements of these tumors.

14. Combined Endoscopic and Minitrephination Techniques in the Surgical Management of Type IV Frontal Cell Disease

Robert T. Deal, MD, Augusta, GA
Kevin C. McMains, MD, Augusta, GA
Stilianos E. Kountakis, MD PhD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to review combined endoscopic and minitrephination techniques in the management of remote frontal sinus lesions.

OBJECTIVES: To present minimally invasive combined endoscopic and minitrephination techniques in the surgical management of type IV frontal cell disease. **STUDY DESIGN:** Case report. **METHODS:** 44 year old man with localized pain in the right forehead. CT of the sinus revealed an opacified expanding type IV frontal cell within the right frontal sinus, draining in the frontal sinus itself. An endoscopic approach through the frontal recess was not successful in reaching this cell. A minitrephination approach was then used and an endoscope was inserted through the trephination hole. Instruments were inserted endoscopically into the right frontal sinus through the frontal recess and then using direct endoscopic visualization through the minitrephination access, the frontal cell was opened and marsupialized. **RESULTS:** The patient recovered uneventfully with his localized frontal pain completely resolved 3 years after surgery. **CONCLUSIONS:** The minitrephination approach can be used to introduce an endoscope into the frontal sinus to assist in the surgical management of remote cephalad and lateral lesions within the sinus that are otherwise difficult to reach using endoscopic techniques alone.

15. Aural Involvement in Loxoscelism

Sreekrishna K. Donepudi, MD, Memphis, TN
Khwaja A. Ahmed, MD, Memphis, TN
Rose Mary S. Stocks, MD PharmD, Memphis, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the epidemiology of Loxosceles spider bites, identify the clinical syndrome associated with Loxosceles reclusa venom and understand the various treatment options for this unique condition.

OBJECTIVES: To report a case of loxoscelism involving the ear in a pediatric patient and to discuss the diagnosis and management of this disease entity. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** An eleven year old male presented with fever, rash, and a necrotic lesion on the lobule of the left ear. The lesion became edematous and tender and progressed to form an eschar over the next 4 days. The patient developed leukocytosis, hemolytic anemia, and proteinuria, and was diagnosed with systemic loxoscelism secondary to a brown recluse spider bite. Improvement was noted with supportive therapy and local wound care without any surgical debridement. Within four days the systemic manifestations resolved and the lobule eschar auto-amputated without any signs of inflammation in the remaining pinna. **RESULTS:** Loxoscelism is a diagnosis based on clinical suspicion, supported by history, physical examination, and laboratory studies. A necrotic wound and acute hemolysis in a healthy child from an endemic area is highly suggestive of Loxosceles envenomation. Locally destructive enzymes are responsible for the tissue necrosis that is observed. Early surgical debridement is discouraged, as it may further mediate these enzymes, thereby exacerbating the tissue destruction. Supportive care is generally the recommended course of treatment. **CONCLUSIONS:** The symptoms of systemic loxoscelism secondary to a brown recluse spider bite can range from a mild hemolytic anemia to a clinical syndrome characterized by DIC and death. The otolaryngologist needs to have a heightened awareness of the head and neck manifestations of this condition to be able to recognize and treat patients appropriately.

16. Lipomatosis of the Neck: Case Report and Literature Review

Sreekrishna K. Donepudi, MD, Memphis, TN
James C. Greene, BS, Memphis, TN
Sri I. Naidu, MD, Cordova, TN
Rose Mary S. Stocks, MD PharmD, Memphis, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate an understanding of the pathophysiology of lipomatosis, discuss the epidemiology of lipomas of the head and neck region, and explain the diagnostic methods and treatment options for managing this tumor.

OBJECTIVES: Lipoma, a tumor of fat cell origin, is a common benign tumor of the head and neck. This soft tissue tumor is typically discrete and often encapsulated. Surgical excision is sometimes undertaken for cosmetic reasons and for enlarging tumors. Lipomatosis, however, is a more diffuse fatty tissue growth sometimes seen in the extremities, rarely in the head and neck. The objectives of this study are to report a case of lipomatosis of the neck with mediastinal extension in a pediatric patient and present a literature review of lipomatosis of the head and neck. **STUDY DESIGN:** Case report and review of the English literature. **METHODS:** A case report is presented with a review of the English literature of lipomatosis involving the head and neck. Clinical presentation with radiographic images and histopathology is presented as well as treatment and follow-up. **RESULTS:** A 2 1/2 year old female presented with a painless, right supraclavicular mass. Radiologic evaluation of the lesion found it to be extending into the anterior mediastinum. Incisional biopsy and histology were consistent with lipomatosis. The lesion was not excised and at two years follow-up the child remains asymptomatic. Follow-up imaging showed no enlargement of the mass. **CONCLUSIONS:** Lipomatosis is uncommon in the head and neck region. While treatment has historically been excision, conservative nonoperative management should be considered with asymptomatic disease in which the morbidity and mortality of excision may be high. Routine follow-up with imaging is recommended to monitor the extent and growth of the tumor.

17. Surgical Treatment of the Anteroinferior Caudal Septal Deflection With the “Sliding Septal Stitch”: A New Technique and Review of the Literature

Brian W. Downs, MD, Chapel Hill, NC
Harold C. Pillsbury, MD*, Chapel Hill, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to classify types of caudal septal deflection, discuss the history of its surgical treatment and compare traditional procedures with the novel technique described herein.

OBJECTIVES: A number of previous papers have described the caudal septal deflection and its surgical treatment. The anatomy of the caudal septum is controversial, as some authors claim that the septum has ligamentous-like attachments with the lower lateral cartilages, while others assert that none exist. Septal cartilage memory and attenuated mucoperichondrial flaps add to the challenge of obtaining long-term success with septoplasty. The aim of this presentation is to review the classification of anterior septal deflections, summarize the surgical options and describe a novel method for its treatment. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** A 33 year old female with nasal obstruction and a severe right anteroinferior caudal septal deflection presented for surgical correction. After isolating the deviated cartilage and creating a pocket in the columella, a chromic suture was passed through the posterior aspect of the deflection and brought out between the lower lateral cartilages, thereby “sliding” the septum into place. This “sliding stitch” was secured with mattress sutures which also closed the hemitransfixion incision. The excess suture was cut anteriorly. Subsequently, a comprehensive literature review was performed. **RESULTS:** The patient has had complete resolution of her nasal obstruction and demonstrated a midline septum on postoperative physical exam. **CONCLUSIONS:** The “sliding septal stitch” has provided excellent short-term surgical correction of the anteroinferior caudal septal deflection in this case. It should be considered for further study as part of the armamentarium for septoplasty surgeons.

18. Minimally Invasive Modified Endoscopic Lothrop: Technique for Frontal Recess Mucosa Preservation

Marc G. Dubin, MD, Savannah, GA
Frederick A. Kuhn, MD*, Savannah, GA

EDUCATIONAL OBJECTIVE: At the completion of the presentation, one should be able to discuss the benefits of the endoscopic intranasal Lothrop performed with frontal sinus punches. Additionally, one should be able to explain the risk of using a drill to perform the procedure as it relates to damage to the lateral mucosa of the frontal recess and alteration of the natural mucociliary clearance of the frontal sinus.

OBJECTIVES: The modified intranasal endoscopic Lothrop procedure has been popularized as an alternative to frontal sinus obliteration for refractory inflammatory frontal sinus disease. However, the drilling required for this procedure disrupts the lateral frontal recess mucosa. Since frontal sinus mucociliary clearance is down the lateral frontal recess wall, this destruction may lead to altered frontal sinus mucociliary clearance and potential ostium constriction. **STUDY DESIGN:** Description of technique. **METHODS:** In two patients an endoscopic modified Lothrop procedure was performed utilizing frontal sinus punches. Bilateral frontal sinusotomies were connected across the midline septum without the use of a drill, sparing the anterior, lateral and posterior frontal recess mucosa. **RESULTS:** This minimally invasive technique allowed complete preservation of all mucosa of the lateral frontal recesses as well as a majority of the mucosa of the anterior and posterior recess. With an average follow-up of 19.5 months both patients have widely patent and functioning frontal sinuses. **CONCLUSIONS:** In select patients whose anterior-posterior frontal sinus dimension is adequate to allow removal of the frontal sinus floor and intersinus septum, the modified Lothrop procedure can be performed in a manner that preserves the natural mucociliary clearance of the frontal sinus. The destruction of the lateral mucosa of the frontal recess that almost uniformly occurs with a drill in the frontal recess can be avoided and frontal ostium patency can be maintained.

19. WITHDRAWN--Effects of Pretreatment Swallowing Exercises on Dysphagia-Specific Quality of Life in Head and Neck Cancer Patients

Ryan D. Duncan, MD, Birmingham, AL
Eben L. Rosenthal, MD, Birmingham, AL
Nancy L. McColloch, MS, Birmingham, AL
Benjamin M. McGrew, MD, Birmingham, AL
Emily B. Wilkinson, MS, Birmingham, AL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss potential ways to improve swallowing quality of life in certain head and neck cancer patients.

OBJECTIVES: The benefit of pretreatment swallowing exercises on dysphagia-specific quality of life (QOL) in head and neck cancer patients has not been assessed. This study was undertaken to assess swallowing QOL in patients who had undergone the dysphagia protocol, a set of pre-radiation treatment swallowing exercises. **STUDY DESIGN:** A cross-sectional analysis of swallowing-specific QOL was performed to determine efficacy of pretreatment swallowing education and exercise. **METHODS:** The assessment tool consisted of the M.D. Anderson Dysphagia Inventory (MDADI), a questionnaire designed specifically for evaluating the impact of dysphagia on QOL. The MDADI was mailed to 31 patients with head and neck cancer treated primarily with radiation. 24 patients had undergone the dysphagia protocol and 7 had not. Statistical analysis of selected variables was performed using the Student’s T-test. **RESULTS:** Twenty-two patients responded, 16 from the treatment group and 6 from the control group. Swallowing QOL improved in 4 of 5 domains in those patients who had undergone the dysphagia protocol. Results were not statistically significant. **CONCLUSIONS:** Implementation of pretreatment swallowing education and exercise may improve dysphagia-specific QOL in head and neck cancer patients undergoing primary radiation therapy.

20. Oral Lesions and Nail Changes in Pemphigus Vulgaris

John D. Edwards, MD, Washington, DC
Ashu P. Mehta, MD, Washington, DC
Alpen A. Patel, MD, Washington, DC
James Katz, MD, Washington, DC
Nader Sadeghi, MD, Washington, DC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the otolaryngologic manifestations of pemphigus vulgaris and recognize oral presentations in patients.

OBJECTIVES: Oral mucosal lesions are common but can be indicative of more severe systemic processes and often present to the otolaryngologist. Pemphigus vulgaris is a chronic, autoimmune disease of mucocutaneous tissues characterized by formation of intraepithelial vesicles and bullae that should be considered in the workup of oral lesions. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** Analysis of a case report with a review of the literature. **RESULTS:** Prior to steroid therapy this disease was uniformly fatal. Blister and ulcer formation occur commonly in the oral and nasal cavities. Oral erosions usually precede the formation of cutaneous lesions and often involve the soft palate. Nail involvement in pemphigus vulgaris as reported in the literature is rare. We present only the second case of a patient with oral mucosal ulcerations and involvement of the nails on both hands without skin involvement as initial presentation. Clinical and histopathologic findings along with disease management are discussed. **CONCLUSIONS:** Clinicians need to be cognizant of the presentations of rare but potentially lethal diseases such as pemphigus vulgaris and include them in the differential diagnosis of oral lesions.

21. The Frequency of Mastoidectomy Procedures Performed Annually in the United States

Lesley C. French, BA, Nashville, TN
Robert F. Labadie, MD PhD, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate the high frequency of mastoidectomy procedures performed annually in the U.S., motivating further research efforts surrounding the procedure.

OBJECTIVES: This report provides a national estimate of the frequency of mastoidectomy procedures performed annually in the U.S. **STUDY DESIGN:** State-specific healthcare utilization data as well as Medicare funded procedural data were used to estimate the number of mastoidectomy procedures performed annually in the U.S. **METHODS:** This study employs utilization data from the State Ambulatory Surgery Database available through the Healthcare Cost and Utilization Project. SPSS statistical software was used to quantify the number of mastoidectomy procedures performed during the year 2002 in the states of Maryland and New Jersey. Information was also obtained from the Federated Ambulatory Surgery Association on the number of Medicare funded mastoidectomy procedures performed in 2002. This information, along with the number of otolaryngologists in each of these states obtained from the American Board of Medical Specialties and state population statistics from the U.S. Census Bureau account for a nationwide estimate. **RESULTS:** In the state of Maryland, it is estimated that mastoidectomy procedures are performed on 1 per 12,000 people. In New Jersey, approximately 1 per 6,000 people undergo mastoidectomy procedures. Furthermore, approximately 1 per 5,000 people over the age of 65 years undergo a mastoidectomy funded by Medicare. Based on this data, a conservative estimate is that at least 50,000 mastoidectomies are performed in the U.S. annually. **CONCLUSIONS:** Though the mastoidectomy is a common outpatient procedure, to date there are no reports in the English language literature on the annual frequency of mastoidectomy procedures in the U.S. This report serves to motivate further research efforts into technological and surgical advancements surrounding the procedure.

22. Extra-Abdominal Desmoid Tumor: A Case Report and Literature Review

Jamey L. Friebe-Cost, BS, Morgantown, WV
Jason C. Fowler, PA, Morgantown, WV
Christopher H. Rassekh, MD, Morgantown, WV
Peilin Zhang, MD, Morgantown, WV
Geoffrey M. Graeber, MD, Morgantown, WV

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the clinical presentation, gross and microscopic findings, and management of extra-abdominal desmoid tumors.

OBJECTIVES: Extra-abdominal desmoid tumors are locally invasive neoplasms that rarely occur in the neck region. A case of extra-abdominal desmoid tumor presenting as a neck fullness is described as well as pathological characteristics, a differential diagnosis, and treatment modalities. **STUDY DESIGN:** Case report and review of the literature. **METHODS:** We present the clinical history of an extra-abdominal desmoid tumor, complete with radiographic imaging, histopathological data, and treatment. Also, a review of the literature on extra-abdominal desmoid tumors was completed. **RESULTS:** A 25 year old male presented with a right-sided neck fullness and difficulty breathing. A CT scan was performed and revealed a large mass in the right side of the neck extending in to the right hemithorax. Involvement of the sternocleidomastoid muscle and collateral vessels surrounding the vertebral column was noted. Ten days after presentation the patient underwent resection of the mass and a neck dissection. Pathological examination revealed findings consistent with a desmoid tumor. The patient did well following surgery with no evidence of recurrence of the tumor at one year follow-up. **CONCLUSIONS:** Extra-abdominal tumors are rare entities that are typically located in the shoulder girdle, chest wall, or inguinal region. However, a few cases have been described where a neck mass is subsequently proven to be an extra-abdominal desmoid tumor. These tumors grow to enormous sizes and often involve vital structures; therefore, early diagnosis and resection are important. As a result, extra-abdominal desmoid tumors should be included in the differential diagnosis of painless neck masses.

23. Factors Associated With Long-Term Complications Following Repair of Mandibular Fractures

Andrea M. Furr, MD+, Jackson, MS
John M. Schweinfurth, MD, Jackson, MS

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to identify, compare, and discuss likely etiologies of complications of mandible fractures and repair.

OBJECTIVES: To analyze factors affecting the incidence of long-term complications following the repair of mandible fractures. **STUDY DESIGN:** Retrospective medical record review. **METHODS:** Medical records for patients with mandibular fractures treated surgically over a five year period were reviewed for information regarding patient demographics, history of substance abuse, etiology, location of fracture, any associated facial injury, type and timing of repair, pre-, peri- and post-operative antibiotic treatment, length of hospitalization, and lag time to repair. The development of infectious and other complications following surgery, specifically, the development of abscesses, fistulae, mal/non-union, hardware exposure, or extrusion, were recorded. **RESULTS:** Of 273 subjects, 56 fractures were repaired using open reduction internal fixation (ORIF) alone, 112 mandibulo-maxillary fixation (MMF), and 105 with a combination of MMF and ORIF. Eighteen patients (6.6%) developed an infection related long-term complication. These included abscess (n=4), infection (n=1), mal/non-union (n=8) and hardware exposure/extrusion (n=9). Smoking and alcohol abuse (p=0.021) and the use of plating techniques (p=0.04) correlated with a higher incidence of long-term complications. Patient age, sex, location and etiology of fracture, associated facial injury, lag time to repair, length of hospitalization, and the use of antibiotics at any time following injury or repair were unrelated to the development of complications. **CONCLUSIONS:** The development of infection, non-union, and related complications following the repair of mandibular fractures correlates with a history of tobacco and alcohol use and ORIF, but there were no statistically significant relationships to patient demographics, fracture site, lag time to repair, length of hospitalization, or the use of antibiotics.

24. The Use of a Palatal Island Flap for Closure of an Oroantral Fistula

Justin M. Garner, MD, Jackson, MS
Richard O. Wein, MD, Jackson, MS

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the options available for closure of an oroantral fistula and

the technique of the palatal island flap.

OBJECTIVES: To describe the use of the palatal island flap in the closure of an oroantral fistula that developed after the surgical removal of a minor salivary gland malignancy. **STUDY DESIGN:** Case report and limited review of the literature on the treatment of oroantral fistulae. **METHODS:** After the failure of a dermal graft reconstruction of the hard palate/soft palate junction and the patient's inability to tolerate a palatal obturator, reconstructive options were reviewed. A palatal island was used to reconstruct the oroantral fistula. **RESULTS:** The patient was discharged on postoperative day #2 with a liquid diet and instructions for oral hygiene. The flap healed well, completely resolving the fistula, and hard palate mucosalization occurred within 4 weeks. **CONCLUSIONS:** The palatal island flap is a technique that offers selected patients with oroantral fistulae a reliable reconstruction with minimal morbidity.

25. Malignant Transformation of Pulmonary Extension of Recurrent Respiratory Papillomatosis After an Airway Fire: A Case report

Mark T. Gurley, MD, Shreveport, LA
Cherie O. Nathan, MD FACS, Shreveport, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the possibility and implications of malignant transformation of pulmonary papillomatosis and possible causative factors associated with the disease.

OBJECTIVES: Recurrent respiratory papillomas (RRP) involving the lungs are rare (1%) with transformation into squamous cell carcinoma occurring in even fewer cases. Radiation, chemotherapy with bleomycin, and smoking are known risk factors for malignant transformation. We present a case of SCC in pulmonary metastasis occurring in a young man with RRP after an airway fire. **STUDY DESIGN:** A case study. **METHODS:** A 23 year old male with juvenile onset RRP was admitted for pleural effusion, pneumonia, and a left cavitory lung lesion. An airway fire during a laser procedure as a child resulted in the patient requiring a permanent tracheostomy. Following the fire, he developed cystic lung lesions and further tracheobronchial extension of the papillomas. **RESULTS:** Aggressive medical management did not resolve the lung lesion. Laryngoscopy and bronchoscopy revealed papillomas of the larynx and tracheobronchial tree with laryngeal and subglottic stenosis. An open thoracotomy and decortication was performed and frozen section returned SCC. He then underwent a pneumonectomy. **CONCLUSIONS:** RRP with pulmonary involvement is a devastating disease. Various theories regarding tracheobronchial involvement have been described, including tracheotomy and even jet ventilation. In addition, pulmonary involvement as a result of aspiration is seen more commonly on the right side. We postulate that spread and malignant transformation in our patient's left lung could have been a result of injury from the airway fire. Also chronic inflammation as a result of the fire could have resulted in replacement of the respiratory epithelium with non-ciliated epithelium and created an iatrogenic squamociliary junction.

26. Infected Laryngeal Saccular Cyst—A Case Report

Ryan P. Hester, MD, Norfolk, VA
John T. Sinacori, MD, Norfolk, VA
Scott A. Schraff, MD, Norfolk, VA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss incidence, natural history, and surgical management of laryngeal saccular cysts.

OBJECTIVES: A seventy-five year old female presented to the emergency department with complaints of four days of progressive hoarseness. A CT scan showed a 2.8cm diameter fluid filled mass protruding from the left laryngeal ventricle, filling much of the laryngeal introitus. Otolaryngology consult was obtained and a flexible fiberoptic exam confirmed these findings. Although she denied difficulty breathing and had no stridor on exam, the large obstructing nature of the lesion prompted ICU admission with airway watch. She was initiated on steroids, antibiotics, and reflux precautions. She was later brought to the operating room where the cyst was found to be emanating from the laryngeal saccule without open connection to the ventricle. Initial aspiration of the lesion revealed mucopurulent fluid. Microsurgical technique and a CO2 laser were used to completely marsupialize the cyst, remove specimens for histological evaluation, and to obliterate the lateral cyst wall. She was discharged home two days later. Office follow-up revealed a normal voice and a well healed surgical site. **STUDY DESIGN:** See above. **METHODS:** See above. **RESULTS:** See above. **CONCLUSIONS:** See above.

27. Use of the Harmonic Scalpel in Superficial and Total Parotidectomy for Benign and Malignant Disease

Lana L. Jackson, MD, Augusta, GA
Christine G. Gourin, MD, Augusta, GA
Daniel S. Thomas, BS, Augusta, GA
D. Russ Blankenship, MD, Augusta, GA
Frederick N. Klippert, MD, Augusta, GA
David J. Terris, MD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the use of the harmonic scalpel in parotid surgery and its reported benefits.

OBJECTIVES: Use of the harmonic scalpel (HS) in superficial parotidectomy for benign parotid disease is associated with a reduction in surgical time as well as intraoperative blood loss. We sought to determine if similar results could be achieved with the expanded use of the HS in parotidectomy for benign or malignant disease. **STUDY DESIGN:** Retrospective review. **METHODS:** The medical records of all patients undergoing superficial or total parotidectomy from 1999 to 2004 were reviewed. Patients were excluded for a history of bleeding disorder, prior facial nerve weakness or for concurrent neck dissection at the time of parotidectomy. **RESULTS:** Forty-three patients underwent HS parotidectomy and 41 patients underwent conventional cold knife parotidectomy (control group). Use of the HS was associated with a significant reduction in intraoperative blood loss (38.0 ± 23.0 ml vs. 66.0 ± 69.0 ml for controls, $p < 0.05$) and duration of drainage (31.80 ± 15.25 hours vs. 39.29 ± 13.63 hours for controls, $p < 0.05$). Use of the HS in superficial parotidectomy ($N=35$) compared to controls ($N=37$) was associated with a significant reduction in intraoperative blood loss (38.0 ml + 25.0 ml vs. 68.0 ± 75.0 ml, $p < 0.05$) and reduced incidence of facial nerve injury ($p < 0.05$). In patients undergoing total parotidectomy no significant differences were observed between the HS ($N=9$) and control groups ($N=4$) in length of surgery, intraoperative blood loss, postoperative drainage, duration of drainage and facial nerve injury. **CONCLUSIONS:** Use of the HS in the surgical treatment of parotid disease appears safe and may confer some advantages over conventional methods of parotid dissection.

28. Treatment of Patulous Tracheoesophageal Fistula With Alloderm Bulking and Upsizing With Custom Prosthesis

Brian K. Kanapkey, MA, Chapel Hill, NC
Subinoy Das, MD, Chapel Hill, NC
Carol G. Shores, MD PhD, Chapel Hill, NC
Mark C. Weissler, MD*, Chapel Hill, NC
Marion E. Couch, MD PhD, Chapel Hill, NC
William W. Shockley, MD*, Chapel Hill, NC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the prevention and management of common causes for

tracheoesophageal voice fistula leaks and a novel therapy for patulous tracheoesophageal fistula.

OBJECTIVES: To describe a novel method of treating around the prosthesis leakage (patulous tracheoesophageal fistula) in laryngectomees without surgical intervention. **STUDY DESIGN:** Retrospective review of a cohort of three patients who had received a laryngectomy and radiation treatment followed by placement of a tracheoesophageal voice prosthesis. These patients subsequently developed patulous tracheoesophageal fistula. **METHODS:** Prostheses were initially replaced with properly sized commercially available voice prostheses. If leakage still persisted due to patulous tracheoesophageal fistula, then the fistulas were circumferentially injected with Alloderm and a custom voice prosthesis with oversized buttons was manufactured for these patients. **RESULTS:** One patient received a custom prosthesis and 12 Alloderm injections over 26 months before his death. The next patient received a custom prosthesis and three injections over three months followed by a partially successful attempt to surgically close the fistula. This patient then requested another tracheoesophageal fistula and was redilated and fitted with a custom prosthesis and has remained free of significant leakage for 19 months. The final patient required 13 injections and multiple custom prostheses over the course of 22 months before a gastrostomy tube was placed and further oral intake was denied to the patient. **CONCLUSIONS:** Proper sizing of the tracheoesophageal fistula prosthetic controls the majority of esophageal leakage. For patulous tracheoesophageal fistula, Alloderm bulking and a custom prosthesis may provide a short-term solution without the need for surgical intervention. Patients appear to require frequent Alloderm injections and close follow-up, however, this method may be successful in preserving voice and oral intake for several months to years.

29. **Pleomorphic Adenoma of the Nose: A Case Report and Review of the Literature**

Barry S. Kang, MD, Tampa, FL
Chau T. Nguyen, MD, Tampa, FL
Matthew A. Kienstra, MD, Tampa, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to: 1) discuss common presentations of pleomorphic adenoma; 2) identify unusual occurrences of pleomorphic adenoma; and 3) explain the treatment for pleomorphic adenoma of the nasal cavity.

OBJECTIVES: 1) Discuss common presentations of pleomorphic adenoma; 2) identify unusual occurrences of pleomorphic adenoma; 3) explain the treatment for pleomorphic adenoma of the nasal cavity; and 4) to review the literature on pleomorphic adenoma in the nose. **STUDY DESIGN:** Retrospective chart review and review of the literature. **METHODS:** Retrospective chart review and review of the literature. A 74 year old man presented to an outside hospital with a history of recurrent epistaxis. During his evaluation he was noted to have a right-sided inferior turbinate mass obstructing the right middle meatus. Initial biopsy result showed benign spiradenoma. We performed a medial maxillectomy and partial septectomy through a midface degloving approach to remove this mass after intraoperative frozen sections suggested a diagnosis of infiltrating carcinoma. **RESULTS:** Tissue samples sent to the Armed Forces Institute of Pathology and the University of Pittsburgh returned histopathology consistent with pleomorphic adenoma. The patient did well postoperatively. He has been disease-free in follow-up of 6 months. **CONCLUSIONS:** We describe a case report of a pleomorphic adenoma within the nasal cavity. These benign salivary gland tumors typically present as masses in the parotid gland or involve the oral cavity. They should also be considered in the differential diagnosis of masses within the nasal cavity.

30. **Outcome Analyses of Patients With Aggressive Non-Melanoma Skin Cancers**

Adam M. Kennedy, BS, New Orleans, LA
Joe L. Hagan, MSPH, New Orleans, LA
Edward L. Parry, MD, New Orleans, LA
Paul L. Friedlander, MD FACS, New Orleans, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the significance of advanced local disease and nodal metastases for patients with aggressive non-melanoma skin cancers (NMSC).

OBJECTIVES: Head and neck cancer patients with NMSC who present with advanced local disease or nodal metastases are at high risk for treatment failure. The objective of this study is to determine the implication of parotid and cervical nodal metastases and the utility of adjuvant radiation therapy. **STUDY DESIGN:** A retrospective chart review. **METHODS:** Between 1998 and 2004, 27 patients with advanced local NMSC, or parotid or cervical metastases were identified. Tumor histology, stage, and treatment with radiation therapy were determined. Kaplan-Meier survival curves were calculated, and the log rank test was used to make comparisons between patients with and without parotid metastases alone, patients with and without T4 disease, and patients treated versus not treated with radiation therapy. **RESULTS:** The overall 2 year disease free survival (DFS) of the group was 61% (mean follow-up of 15 months). There was no significant difference in DFS at 2 years for the 9 patients (33%) with T4 disease versus patients with T1 - T3 disease: 54% versus 75% (p=0.90). Six patients (22%) presented with parotid metastases alone, and all were alive at last follow-up, versus a 2 year DFS of 52% for all other patients. Two year DFS was comparable for patients treated with adjuvant radiation therapy (60%) versus non-radiated patients (50%) (p=0.53) **CONCLUSIONS:** Patients with NMSC who present with advanced local disease or nodal metastases have a poor outcome. In this study, the use of adjuvant radiation therapy imparted no significant survival advantage. Novel treatments are required to improve outcome.

31. **Incidence of Samter's in Consecutive Patients Undergoing Functional Endoscopic Sinus Surgery**

Ji-Eon Kim, BS, Augusta, GA
Stilianos E. Kountakis, MD PhD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to: 1) discuss the incidence of Samter's triad in patients undergoing sinus surgery; 2) review the pathophysiology of Samter's triad; and 3) discuss surgical management of patients with Samter's triad.

OBJECTIVES: The purpose of this study is to determine the incidence of Samter's triad (nasal polyps, asthma and aspirin sensitivity) in consecutive patients undergoing functional endoscopic sinus surgery (FESS). **STUDY DESIGN:** Retrospective chart review. **METHODS:** Retrospective chart review on 208 consecutive patients undergoing FESS within a two-year time span. Data was collected on patient's diagnosis, age, race, type of surgery performed, presenting complaints, smoking history, and number of previous FESS procedures. **RESULTS:** The average age was 32.95 (SD 19.2, median 33) and 48.4% of the patients were female. Four patients were diagnosed with Samter's triad, with an overall prevalence of 1.9% (4/208). On average, patients with Samter's triad had received 4.00 previous FESS procedures (SD 2.2), which was approximately four times that of patients without Samter's triad who in comparison averaged 0.95 (SD 3.84) previous FESS procedures (p=0.077). We found the following contributing factors that were associated with increased number of previous FESS procedures in our patient population: presence of cystic fibrosis (p=3.74x10⁻¹⁴), not undergoing MMA (p=3.64x10⁻⁴), presence of nasal polyps (p=0.004), presence of aspirin sensitivity (p=0.012) and presence of Samter's triad (p=0.077). **CONCLUSIONS:** Our results showed that 1.9% of our FESS patients had all three symptoms of the Samter's triad. However, 16.3% of the patients had at least two of the three components of the triad with the combination of nasal polyps and asthma being the most common (13.1%).

32. **Modified Percutaneous Malar Fat Pad Repositioning Technique**

Todd A. Kupferman, MD, Shreveport, LA
Tim S. Lian, MD, Shreveport, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe a modified technique for percutaneous malar fat pad repositioning.

OBJECTIVES: To describe a modified technique for percutaneous malar fat pad repositioning. **STUDY DESIGN:** A prospective case series. **METHODS:** A prospective series of three patients underwent percutaneous malar fat pad repositioning via our modified technique. Our technique is modified from previously published techniques in several ways. First, we used Alloderm at the base of our suture loops to help avoid a foreign body reaction and possible extrusion of the gortex which had been used in the previous study. Also we were able to avoid extensive dissection in the temporal region which reduces a potential risk to the frontal branch of the facial nerve and allows for a faster procedure. **RESULTS:** All 3 of the patients underwent the procedure to reposition their malar fat pads and blunt their nasal labial folds. The results of the procedure demonstrated that symmetry was maintained and the nasal labial folds appeared less prominent. All patients were very happy with their results and denied postoperative pain or discomfort. No incidence of facial nerve paralysis or paresis occurred in our series. **CONCLUSIONS:** Percutaneous malar fat pad repositioning is a reliable method to correct the nasal labial fold with low morbidity. Our modified technique for percutaneous malar fat pad repositioning is easier than previous techniques with less dissection and has the potential for less foreign body reaction.

33. **Detection of Occult B-Cell Lymphoma in Lymphadenectomy Specimen Removed for Papillary Thyroid Carcinoma**

Kshitij V. Majmundar, MD, Richmond, VA
Michael Idowu, MD, Richmond, VA
Evan R. Reiter, MD, Richmond, VA
Celeste N. Powers, MD PhD, Richmond, VA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to demonstrate the importance of vigilance for concurrent occult nodal malignancies in the assessment of cervical lymph node metastases.

OBJECTIVES: 1) To present a case of incidental diffuse large B-cell lymphoma noted in a cervical lymphadenectomy specimen removed for papillary thyroid carcinoma; and 2) to stress the importance of vigilance for concurrent occult nodal malignancies in the assessment of cervical lymph node metastases. **STUDY DESIGN:** Case report. **METHODS:** Retrospective chart review. **RESULTS:** A 45 year old male presented with a slowly enlarging right thyroid mass. Fine needle aspiration was nondiagnostic. Intraoperative frozen sections of the mass revealed papillary carcinoma, prompting total thyroidectomy. Post-operatively, the patient received radioactive iodine and thyroid suppressive therapy. Six months later, the patient returned with a new right level II mass, which fine needle aspiration identified as metastatic papillary carcinoma. The patient underwent a modified radical neck dissection. Histopathology demonstrated metastatic papillary carcinoma, but in addition multiple nodes revealed monomorphic large cells with pale nuclei, numerous mitoses, and an abundant eosinophilic cytoplasm consistent with diffuse large B-cell lymphoma. The patient was treated with chemotherapy for the lymphoma, followed by radiation therapy and a second dose of radioactive iodine for the papillary carcinoma. **CONCLUSIONS:** Metastatic papillary carcinoma of thyroid occurring with concomitant diffuse large B-cell lymphoma is very rare. At least 1% of cervical lymphadenectomy specimens harbor clinically unsuspected malignant neoplasms, most of which are papillary thyroid carcinoma or malignant lymphoma. Thus both the operating surgeon and pathologist should be aware of the possibility of and actively search for concurrent occult malignant nodal processes occurring in the background of a primary metastatic lesion to the cervical lymph nodes.

34. **The Changes in Stromal and Tumor Gene Expression in Human Squamous Cell Carcinoma**

Belinda A. Mantle, MD, Birmingham, AL
Andra R. Frost, MD, Birmingham, AL
Melissa A. Talbert, BA, Birmingham, AL
Robert L. Eller, MD, Birmingham, AL
Eben L. Rosenthal, MD, Birmingham, AL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand the shifts in gene expression between normal epithelium, normal stroma, tumor associated stroma and tumor cells.

OBJECTIVES: Identify modulations in gene expression between normal epithelium, normal stroma, tumor associated stroma and tumor cells. **STUDY DESIGN:** Prospective analysis designed to isolate RNA and compare the pattern of gene expression from epithelial and stromal cells of both tumor and normal mucosa. **METHODS:** With prior institutional review board approval, tumor and normal mucosal biopsies of patients with previously untreated oral cavity/pharyngeal squamous cell carcinoma were collected at the time of surgery. Samples were snap frozen in OCT medium. From frozen sections, laser capture microdissection was performed to obtain cell samples. RNA was extracted, amplified and hybridized to an Affymetrix gene array. Gene array expression was focused on molecules known to be important in tumor-stroma interactions (i.e. proteases, growth factors, integrins). **RESULTS:** Analysis confirmed the appropriate stromal and epithelial expression of vimentin demonstrating the accuracy of the laser dissection. Interestingly, a shift in gene expression between the epithelial tissues and stromal elements was identified in a subset of genes, PAI-1. Other genes were found to be down regulated in tumor associated stroma but not tumor epithelium, TIMP 3. **CONCLUSIONS:** When comparing normal mucosa to tumor, the expression gradient of certain genes changes from stroma to epithelium. While the expression levels alone may not be important, the shifts in expression within the tumor microenvironment may have implications and be a potential therapeutic target.

35. **Follicular Dendritic Cell Sarcoma of the Tonsil: A Case Report**

Chad M. McDuffie, MD, Shreveport, LA
Timothy S. Lian, MD, Shreveport, LA
Greg L. Buchalter, MD, Shreveport, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the diagnosis and treatment of follicular dendritic cell sarcoma.

OBJECTIVES: The objectives were to present a case report of a woman with follicular dendritic cell sarcoma (FDSC) of the tonsil and discuss the diagnosis and management of FDSC. **STUDY DESIGN:** Case report and literature review. **METHODS:** A Medline search and review of literature to assess cases of FDSC involving the head and neck, especially the tonsils. **RESULTS:** Twenty cases of FDSC of head and neck were found in the literature with only seven cases involving the tonsils. The case report describes a woman with a right tonsillar mass diagnosed as FDSC. The excision and post-operative radiation therapy is described. **CONCLUSIONS:** Follicular dendritic cell sarcoma involving the head and neck is rare and even rarer in the tonsils. FDSC should be included in the differential diagnosis of tonsillar masses.

36. **Defining the Mastoid Antrum**

Benjamin M. McGrew, MD, Birmingham, AL
Kristopher F. Lay, MD, Birmingham, AL
Thomas L. Eby, MD*, Birmingham, AL
Joel K. Cure, MD, Birmingham, AL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the location and dimensions of the mastoid antrum relative to important anatomic structures and in absolute measurements.

OBJECTIVES: To obtain normative data for the dimensions of the mastoid antrum in the human temporal bone. **STUDY DESIGN:** Retrospective review of temporal bone computerized tomography (CT) scans performed at our university. **METHODS:** The Clinical Image Management System (CIMS) developed at our institution was used to measure temporal bone CT scans performed within the past four years on 100 adult patients, 50 women, 50 men, ages 25-75. Seven planar measurements, five angular measurements, and a volume measurement of the mastoid antrum were made. **RESULTS:** The mastoid antrum is a tetrahedral shaped space located posterior, lateral, and superior to the labyrinth. The average dimensions were 2.16mm for the aditus, 10.7mm long axis, 3.99mm horizontal axis, and 8.43mm vertical axis. The average volume was 0.32 ml. **CONCLUSIONS:** Although clear definition of its position relative to other major landmarks has resulted in surgical techniques that allow accurate identification of the mastoid antrum, accurate definition of the location and dimensions of the mastoid antrum beyond these relative positions are lacking. Normative dimensions of the mastoid antrum are defined by this study and give surgeons the ability to classify preoperatively the relative size and surgical tolerances required for safe identification and dissection of the mastoid antrum.

37. Multiple Spontaneous Encephaloceles Manifesting in a Family
Kevin E. McLaughlin, MD, Monroe, LA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain the etiologies for spontaneous encephaloceles and discuss the pertinent variables that dictate their individual repair as well as the surgical techniques available. One will also be able to discuss the pathophysiology of cerebrospinal fluid as well as the medical and surgical interventions for benign intracranial hypertension.

OBJECTIVES: Present the first reported case of a mother and daughter with multiple encephaloceles. Their differing presenting symptoms will be reviewed. Their common and differing radiographic findings will be illustrated. Differing aspects of their presentation dictated different surgical interventions. One of the daughter's encephaloceles had the uncommon presentation of including the lateral ventricle extending into the nasal cavity via a frontoethmoid defect. The reasons for treating her with an external approach via traditional craniotomy will be discussed. The mother had a lateral pterygoid recess sphenoid encephalocele, treated endoscopically via a transmaxillary/transpterygoid approach. The reasons for her endoscopic treatment as well as other indications for endoscopic treatment will be discussed. Postoperative monitoring of intracranial pressure will be discussed. Both patients had intracranial hypertension. Medical and surgical treatments for intracranial hypertension will be reviewed. Both patients are doing well more than two years after their surgeries. **STUDY DESIGN:** Case series. **METHODS:** See above. **RESULTS:** See above. **CONCLUSIONS:** Intracranial hypertension may cause varying spontaneous encephaloceles and symptoms in family members.

38. Cystic Hygroma of the Auricle, External Auditory Canal, and Mastoid
Matthew M. Meigs, MD, Tampa, FL
Loren J. Bartels, MD*, Tampa, FL
Matthew A. Kienstra, MD, Tampa, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to recognize typical and atypical presentations of cystic hygroma including presentations involving the auricle, external auditory canal and mastoid and discuss techniques for diagnosis and management.

OBJECTIVES: To describe two unique cases of cystic hygroma involving the ear. To discuss the diagnosis and management of cystic hygroma. To review the current literature regarding cystic hygroma. **STUDY DESIGN:** Case report and literature review. **METHODS:** The cases of two children with cystic hygroma involving the ear are presented. The clinical and radiologic features, management and outcome are discussed. The current literature regarding cystic hygroma is reviewed. **RESULTS:** Both patients underwent uncomplicated surgical resection of their cystic hygromas and were free of disease at latest follow-up visit. **CONCLUSIONS:** Cystic hygroma is a form of lymphangioma that presents in children and, while benign, can develop a pattern of local invasion and recurrence. Diagnosis is based on clinical exam as well as radiographic imaging. Treatment is primarily surgical, although other treatment modalities have been proposed. Cystic hygroma most frequently appears in the posterior neck. These cases are unique in that they involve the auricle, external auditory canal, and mastoid. This underscores the need for increased awareness of atypical presentations of this disease.

39. Association of Cyclooxygenase-2 Inhibition With Decreased Mortality After Head and Neck Cancer Treatment
Marcus W. Moody, MD, Charleston, SC
Joshua D. Hornig, MD, Charleston, SC
Terry A. Day, MD, Charleston, SC
M. Boyd Gillespie, MD, Charleston, SC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to: 1) recognize the role of prostaglandin E2 in head and neck tumor formation; 2) discuss the mechanism of action of cyclooxygenase inhibitors in reducing prostaglandin E2 production; and 3) recognize the potential chemoprotective effects of cyclooxygenase inhibitors after head and neck cancer treatment.

OBJECTIVES: To determine whether chronic use of a cyclooxygenase inhibitor is associated with decreased mortality and decreased disease recurrence after head and neck cancer treatment. **STUDY DESIGN:** Case control study. **METHODS:** An electronic patient database was searched to determine the vital status of all patients treated for head and neck squamous cell carcinoma over an 8 year period at a single academic institution. The database was then searched to identify patients who were chronic users of aspirin, nonsteroidal anti-inflammatory medications, or selective COX-2 inhibitors. The rate of cyclooxygenase inhibitor use among patients who had died (cases) was then compared to rate of use among survivors (controls). The comparison was made while controlling for tumor site, tumor stage, treatment received, age, sex, race, and smoking status. **RESULTS:** A total of 375 patients was treated for head and neck squamous cell carcinoma over the 8 year period examined. Of the 375 patients, 150 patients had died (cases) and 225 were alive (controls) at the time of the study. When the rate of cyclooxygenase inhibitor use was compared between groups, significantly more survivors were users than those who had died of disease ($p=0.01$). Additional subgroup analysis will investigate whether the type of cyclooxygenase inhibitor (aspirin, nonsteroidal, or selective COX-2) is important in reducing head and neck cancer-related mortality. **CONCLUSIONS:** Daily use of a cyclooxygenase inhibitor appears to reduce the risk of mortality after head and neck cancer treatment. These findings support the need for a randomized, controlled clinical trial to investigate the chemoprotective effects of these medications in head and neck cancer patients.

40. Endolymphatic Hydrops Complicating Gamma Knife Radiotherapy for Vestibular Schwannoma
Jayakar V. Nayak, MD PhD, Pittsburgh, PA
Elizabeth H. Toh, MD, Pittsburgh, PA
Barry E. Hirsch, MD, Pittsburgh, PA
Joseph M. Furman, MD PhD, Pittsburgh, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss anticipated complications of stereotactic radiation treatment for vestibular schwannomas, including clinical manifestations of radiation induced vestibulopathies.

OBJECTIVES: Stereotactic radiation is an established treatment option for select patients with vestibular schwannomas. Expected complications from this intervention include trigeminal and facial neuropathies, hearing loss and dizziness. We report a patient who developed new onset episodic vertigo with fluctuating audiologic symptoms suggestive of delayed endolymphatic hydrops. **STUDY DESIGN:** Case report. **METHODS:** A 50 year old male was evaluated by the otolaryngology service for right-

sided progressive hearing loss and tinnitus over a 6 month period without associated vestibular symptoms. An 8mm intracanalicular right vestibular schwannoma was diagnosed on magnetic resonance imaging. After extensive discussion of treatment options, the patient elected to undergo gamma knife radiosurgery as primary treatment. **RESULTS:** 20.8 Gy of gamma radiation was administered in a single dose using 4 tumor isocenters. Within 5 weeks of this intervention, the patient experienced increased right-sided tinnitus, hyperacusis, diplacusis and hearing loss associated with severe episodic vertigo. Vestibular testing and audiometry showed a right-sided reduced caloric response and progression in low frequency sensorineural hearing loss in the treated ear. He is currently being treated with systemic steroids and diuretics with symptomatic improvement. **CONCLUSIONS:** This clinical presentation of fluctuating hearing loss with episodic vertigo is suggestive of endolymphatic hydrops in an ear following gamma knife stereotactic radiation treatment for a vestibular schwannoma. This diagnosis is further supported by clinical improvement with diuretic therapy.

41. **WITHDRAWN--Comparison of Three Techniques for Transsphenoidal Pituitary Surgery**

Jeffrey G. Neal, MD+, Charleston, SC
Sunil J. Patel, MD, Charleston, SC
John S. Kulbersh, BS, Charleston, SC
John D. Osguthorpe, MD*, Charleston, SC
Rodney J. Schlosser, MD, Charleston, SC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to compare three different techniques for transsphenoidal pituitary surgery and explain the advantages, complications and efficacy of each.

OBJECTIVES: To compare three different techniques for transsphenoidal pituitary surgery: 1) sublabial transseptal approach with microscopic resection; 2) transnasal transseptal approach with endoscopic resection; and 3) endoscopic approach with endoscopic resection. **STUDY DESIGN:** Retrospective review. **METHODS:** Fifty pituitary surgeries performed by the same neurosurgeon were reviewed. Demographic, radiographic and clinical data were collected. **RESULTS:** Fifteen patients underwent sublabial transseptal approach with microscopic tumor resection, 21 patients underwent the transnasal transseptal approach with endoscopic tumor resection and 14 underwent both an endoscopic approach and endoscopic tumor resection. There were a total of 20 complications in the sublabial group, 13 transnasal, and 6 endoscopic complications. CSF leak incidence was sublabial 53%, transnasal 47%, and endoscopic 28%. Lumbar drains were required in 40% of sublabial, 38% of transnasal, and 7% of endoscopic approaches. Nasal packing was used in 100% of sublabial and transnasal approaches and 0% of endoscopic approaches. Mean recurrence rate and follow-up was sublabial 6.6% (50 months), transnasal 9.5% (11 months), and endoscopic 0% (7 months). Average hospital stay was sublabial 8.3 days, transnasal 6.2 days, and endoscopic 3.4 days ($p<.05$). **CONCLUSIONS:** Transsphenoidal pituitary surgery has evolved over the past several decades, as advances in technology have been the catalyst for less invasive surgeries. Less invasive approaches, such as transnasal approach with endoscopic resection of tumor and endoscopic approach with endoscopic tumor resection have less morbidity and a shorter hospital stay than traditional sublabial approaches. Continued follow-up is needed to confirm long-term benefits and similar recurrence rates.

42. **Skin Cancers of the Head and Neck Presenting With Cranial Neuropathies**

Jeffrey G. Neal, MD, Charleston, SC
John S. Kulbersh, BS, Charleston, SC (*Presenter*)
Marion B. Gillespie, MD, Charleston, SC
Sunil J. Patel, MD, Charleston, SC
Zoran Rumboldt, MD, Charleston, SC
Rodney J. Schlosser, MD, Charleston, SC
Terry A. Day, MD, Charleston, SC

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe and discuss how cranial neuropathies can be the presenting symptoms of cutaneous skin cancers of the head and neck.

OBJECTIVES: To describe cranial neuropathies as the presenting symptoms of skin cancers of the head and neck. **STUDY DESIGN:** Retrospective review. **METHODS:** Six cases of skin cancers of the head and neck presenting with cranial neuropathies were reviewed. Demographic, radiographic and clinical data were collected. **RESULTS:** Five of the 6 patients presented with multiple manifestations of cranial neuropathies with a mean of 3 cranial neuropathy-related symptoms. Although none of the patients had visible skin lesions, five patients were found to have squamous cell carcinoma, and one patient had a melanoma arising in the site of a prior clear cell carcinoma. All had a history of prior skin cancers that were considered adequately treated. Of the 6 patients, 5 patients presented with facial numbness, 4 patients with facial paralysis, 4 patients facial pain, 2 patients with paresthesias, 1 patient with formication, and 1 patient had hearing loss. Four of the 6 patients were noted to have perineural spread by MRI, and 5 patients had histological evidence of perineural spread. Five of the 6 patients underwent treatment ranging from Mohs microsurgery to multimodality treatment including surgery, radiation, and/or chemotherapy while one patient decided against any intervention. **CONCLUSIONS:** Patients presenting with cranial neuropathies with a history of prior skin cancer and/or significant sun exposure should have a thorough evaluation to exclude aggressive skin cancer with perineural invasion. Perineural spread of cutaneous skin cancer of the head and neck is often delayed in diagnosis in the clinical setting potentially resulting in increased morbidity and mortality of these patients.

43. **Alcohol Withdrawal Prophylaxis in Patients Undergoing Surgical Treatment of Head and Neck Squamous Cell Carcinoma**

Kimberly M. Neyman, BS, Augusta, GA
Christine G. Gourin, MD, Augusta, GA
David J. Terris, MD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the complications associated with postoperative alcohol withdrawal, be familiar with current treatment recommendations for patients at risk and be aware of the limitations of treatment.

OBJECTIVES: Alcohol abuse is common in patients with squamous cell cancer of the head and neck. Postoperative alcohol withdrawal is associated with increased morbidity and prolonged hospitalization and is commonly treated with benzodiazepines. We reviewed our experience with benzodiazepine prophylaxis in high risk patients undergoing surgical treatment of head and neck cancer. We sought to determine if benzodiazepine prophylaxis was successful in preventing complications from alcohol withdrawal. **STUDY DESIGN:** Nonrandomized, retrospective patient analysis. **METHODS:** The medical records of all patients diagnosed with squamous cell carcinoma of the head and neck from 1999-2004 were retrospectively reviewed. Patients who underwent surgical resection and who were considered high risk for postoperative alcohol withdrawal received benzodiazepine prophylaxis following an established institutional protocol and comprised the study group. **RESULTS:** Of 96 patients who met study criteria, 13 patients developed alcohol withdrawal symptoms and 9 patients developed delirium tremens (22.9%). Patients who developed alcohol withdrawal remained in the hospital an average of 10.8 days longer (19.0 versus 8.2) and had an overall complication rate of 50% (11 of 22) versus a 17.6% (13 of 74) complication rate in patients that did not develop withdrawal ($p<0.05$). **CONCLUSIONS:** Alcohol withdrawal is associated with a significantly greater incidence of postoperative complications and length of hospitalization. Benzodiazepine prophylaxis does not prevent postoperative alcohol withdrawal symptoms in all patients at risk. Alternate methods of prophylaxis should be explored.

44. **The Use of Bone Anchored Hearing Aids in Congenital Conductive Hearing Loss**

Carolyn V. Nguyen, BS, Nashville, TN
Seth M. Cohen, MD MPH, Nashville, TN
Robert F. Labadie, MD PhD, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to recognize that demonstrating auditory benefit with BAHA pre-operatively in patients with congenital conductive hearing loss allows the surgeon to intra-operatively proceed with BAHA placement when ossicular chain reconstruction is difficult, impossible, or unlikely to improve hearing outcome.

OBJECTIVES: The osseointegrated bone anchored hearing aid (BAHA) provides significant improvement in quality of life for patients with congenital conductive hearing loss. A pre-operative trial placement of a BAHA to assess benefit should be an integral component of the congenital conductive hearing loss evaluation. **STUDY DESIGN:** Case series. **METHODS:** Two patients with congenital conductive hearing loss and ossicular abnormalities by CT are reported in which pre-operative evaluation demonstrated benefit with BAHA. Middle ear exploration with possible BAHA placement was subsequently scheduled. **RESULTS:** Patient one is a 9 year old male with a stenotic external auditory canal, questionable CT scan abnormality, and unilateral maximal conductive hearing loss. He underwent middle ear exploration and possible BAHA placement. Intra-operatively, complete fixation of all ossicles and marked abnormality of the tympanic ring were noted. Due to the risk of facial nerve damage and questionable benefit from ossicular chain reconstruction, a BAHA was placed. Post-operatively, the patient demonstrated marked auditory improvement. Patient two is a 16 year old male with congenital aural atresia, maximal conductive hearing loss, and stapedia abnormality by CT scan. A pre-operative BAHA trial was performed and demonstrated benefit. Intra-operatively, a rudimentary stapes with no oval window was found. A BAHA was placed with improvement to normal hearing post-operatively. **CONCLUSIONS:** The BAHA should be an integral part of the pre-operative assessment and planning for patients with congenital conductive hearing loss. Demonstrated hearing improvement with a BAHA allows the surgeon to intra-operatively proceed with BAHA placement when ossicular chain reconstruction is difficult, impossible, or unlikely to improve hearing outcome.

45. Acute Onset Stridor in a Cohort of Adolescent Females

Chau T. Nguyen, MD, Tampa, FL
Scott A. Powell, MD, Tampa, FL (*Presenter*)
Joy E. Gaziano, MS, Tampa, FL
Vicki M. Lewis, MS, Tampa, FL
Tapan A. Padhya, MD, Tampa, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to: 1) discuss the anatomic findings with stridor; 2) discuss the differential diagnosis of stridor; and 3) compare the anatomic causes of stridor with psychological causes.

OBJECTIVES: To present a cohort of patients with an unusual presentation of stridor, their evaluation and management along with their final outcome and to review the pertinent literature. **STUDY DESIGN:** A retrospective review of medical charts and a review of the literature. **METHODS:** Chart review of the 12 patients will be collected, and data extracted will include demographic data, historical data, physical exam data, lab data, procedure data, and follow-up data. The report by the department of health epidemiologist will be reviewed. Review of the current literature. **RESULTS:** The 12 patients were all within 2-3 years difference in age range and were all members of the cheer leading/dance/spirit squad. During practice in the spring of 2003 they may have been exposed to fumes from the painting of the gym. Within a 4 week time span, all were seen at the department of otolaryngology with stridor. They were also seen by speech pathology for videostroboscopy evaluations, and later speech therapy. Because of this clustering of unusual presentations, the department of health's epidemiologist became involved. All testing was negative. Several patients exhibited abnormal vocal fold motion with inspiration, while others showed supraglottic abnormalities. After working with speech therapy, all of the patients exhibited complete resolution of symptoms at one year follow-up. **CONCLUSIONS:** In summary, this is the first report we are aware of in the English language literature of acute onset stridor from vocal fold dysfunction in a cohort of adolescent females. Although it is doubtful that these symptoms developed as a direct consequence from the environmental irritant of paint fumes or were secondary to an as yet unrecognized viral illness, these remain difficult to disprove. The overall clinical setting that most fits is conversion disorder. The systematic approach undertaken by a team including an otolaryngologist, speech pathologist, and epidemiologist, with the utmost care given the patients' ages and mental conditions, proved to be effective in management of this complex disorder and highly unusual situation.

46. Combined External and Endoscopic Frontal Sinusotomy With Dual Stent Placement: A Retrospective Review

Matthew R. O'Malley, MD, Nashville, TN
Charles K. Oh, MD, Irvine, CA
Paul T. Russell, MD, Nashville, TN
James A. Duncavage, MD*, Nashville, TN

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the efficacy and utility of placing multiple stents in the frontal sinus outflow tract and to compare this technique with other methods of managing frontal sinus disease.

OBJECTIVES: The placement of a stent in the frontal sinus outflow tract during frontal sinusotomy has been described. In this study we seek to evaluate the efficacy of placing two stents in the frontal sinus outflow tract during combined external and endoscopic frontal sinusotomy, and we compare this technique to the use of a single stent as well as other techniques. **STUDY DESIGN:** Retrospective chart review. **METHODS:** Charts were reviewed of all patients undergoing combined external and endoscopic frontal sinusotomy with placement of two stents in at least one frontal sinus outflow tract (FSOT) over a 1 year period at tertiary referral center. The efficacy of the two stent technique in providing a patent FSOT was evaluated and compared to the use of a single stent and other techniques using historical data. **RESULTS:** 23 patients were included for review. 29 FSOTs received dual stents. 17 patients received dual stenting unilaterally while 6 patients received dual stenting bilaterally. 25/29 (86%) of FSOTs remained patent at most recent follow-up. Average length of follow-up was 49 weeks. 3 patients received a second procedure. The use of two stents compares favorably with the use of 1 stent which has a patency rate of 79% at 1 year. The use of two stents also produced similar success rates when compared to success rates reported for the endoscopic Lothrop procedure. **CONCLUSIONS:** Combined external and endoscopic frontal sinusotomy with placement of dual stents is a safe, effective treatment for frontal sinus disease.

47. Method of Correction of Pixie Ear During Rhytidectomy

Ashli K. O'Rourke, MS, Augusta, GA
Frank M. Kamer, MD, Beverly Hills, CA
Achi H. Chen, MD, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to explain and discuss the pixie ear. Participants should also be able to explain the treatment of the pixie ear, both congenital and iatrogenic, using a modified V to Y advancement flap concomitantly with rhytidectomy.

OBJECTIVES: The "pixie ear", an attached, tapering, inferiorly displaced ear lobe may be congenital or iatrogenic. As a post-rhytidectomy complication, the pixie ear deformity is the hallmark of excessive skin tension and a telltale sign of surgery. It is often the result of excessive skin excision or anchoring of the skin to the ear lobe causing it to become displaced in an antero-inferior direction with elongation and obliteration of the free-hanging edge. **STUDY DESIGN:** Prospective series. **METHODS:** Described is a method of correction useful in addressing both congenital and iatrogenic pixie ear deformities during rhytidectomy that utilizes a modified V

to Y advancement flap incorporated into the usual skin closure **RESULTS:** This technique results in restoration of the natural rounded free border of the ear lobule, while avoiding any conspicuous skin incisions beyond that of the standard rhytidectomy. **CONCLUSIONS:** This method for correcting the pixie ear deformity is easily incorporated into the rhytidectomy and yields excellent cosmetic results. It is useful in correcting the iatrogenic pixie ear during revision rhytidectomy or in correcting the congenital pixie ear during primary rhytidectomy.

48. Concurrent Sporadic Parathyroid Adenoma and Carcinoma: Possible Insights Into Parathyroid Tumorigenesis

Sara I. Pai, MD PhD, Baltimore, MD
Bradley J. Goldstein, MD PhD, Baltimore, MD
Kimberly D. Studeman, MD, Baltimore, MD
William H. Westra, MD, Baltimore, MD
Ralph P. Tufano, MD, Baltimore, MD

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to think critically about the tumor biology of parathyroid adenoma and view adenomas as a potential progression model to parathyroid carcinomas.

OBJECTIVES: We discuss a 70 year old man who presents with a synchronous, sporadic parathyroid adenoma and carcinoma in two distinct glands in the setting of primary hyperparathyroidism. We briefly discuss the causes of primary hyperparathyroidism, and the characteristics which are thought to differentiate adenoma from carcinoma, and offer possible insights into the tumor biology and natural history of sporadic parathyroid adenomas and carcinomas. **STUDY DESIGN:** We compared the differential protein expression of Rb, p53, p16, and KiV67 between the parathyroid adenoma and carcinoma. **METHODS:** We performed immunohistochemistry using antibodies against Rb, p53, p16, and KiV67. **RESULTS:** We demonstrated differential protein expression of Rb, p53, p16, and KiV67 between the parathyroid adenoma and carcinoma. **CONCLUSIONS:** We offer possible insights into the tumor biology and natural history of sporadic parathyroid adenomas and carcinomas.

49. Nonsurgical Treatment of Laryngeal Zygomycosis: Successful Treatment With the Investigational Antifungal Agent, Posaconazole

David P. Paulson, BS, San Antonio, TX
C. B. Simpson, MD, San Antonio, TX

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the possible use of posaconazole as an alternative to Amphotericin B in the treatment of zygomycosis.

OBJECTIVES: Report a case of laryngeal zygomycosis successfully treated with posaconazole alone. Discuss conventional treatment of zygomycosis and published data concerning nonsurgical treatment of zygomycosis. Review literature involving posaconazole and clinical trials underway. **STUDY DESIGN:** Case report of a subject within an open label, non-comparative, multicenter phase 3 study of posaconazole in patients failing or intolerant to standard antifungal therapy. **METHODS:** Chart review. **RESULTS:** Conventional treatment of zygomycosis involves combined surgical debridement and systemic Amphotericin B. We present a case of a 74 year old diabetic with steroid dependent COPD, CHF and CRI who developed biopsy proven laryngeal zygomycosis. The patient was not a candidate for aggressive surgery and developed renal intolerance to liposomal Amphotericin B by treatment day six. The patient was subsequently treated successfully with 351 days of posaconazole monotherapy. The disease process reversed with notable improvement clinically as both her voice, and ability to swallow were preserved. She also showed marked improvement radiographically. Ultimately the patient died on day 352 due to myocardial infarction, COPD and renal failure. **CONCLUSIONS:** Posaconazole, an investigational antifungal agent, is a promising alternative to conventional treatment of zygomycosis. There is supportive data within animal testing that posaconazole is effective against zygomycosis and this case demonstrates a positive effect of posaconazole treatment in a complex patient who did not undergo aggressive surgery.

50. A Novel Technique for Intraoperative Electromyographic Monitoring of the Recurrent Laryngeal Nerve

Melanie L. Petro, MD+, Jackson, MS
John M. Schweinfurth, MD, Jackson, MS

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss potential techniques for identifying and monitoring intraoperative stress to the recurrent laryngeal nerve during thyroidectomy.

OBJECTIVES: To develop a reliable, user friendly, intraoperative electromyographic (EMG) monitoring technique to decrease the incidence of injury to the recurrent laryngeal nerve (RLN). **STUDY DESIGN:** Prospective cohort study. **METHODS:** Thirty patients underwent thyroid surgery at a tertiary care institution: 28 total thyroidectomy (6 for malignancy) and 2 thyroid lobectomy. Each completed the Voice Handicap Index and preoperative fiberoptic laryngeal examination. Continuous monitoring was performed using a widely available, commercial nerve integrity monitor and a single, paired electrode placed into the cricothyroid space under direct vision. Participants then completed a follow-up survey and laryngeal examination. The incidence of vocal paresis, paralysis, or voice handicap was recorded. Subjective utility of the device based on the surgeon's immediate post-operative impressions were rated on a visual analog scale. **RESULTS:** Sixty RLNs were identified under EMG monitoring. Vocal cord paresis or paralysis did not occur. Post-operative VHI scores were unchanged from preoperative assessment. The technique was recorded as 1/5 (best) in 70% of cases. **CONCLUSIONS:** The technique described is sensitive, easy to use, accurate, and associated with a high degree of surgeon satisfaction. This technique is not associated with additional risk to the patient and offers the potential to reduce injury. Monitoring provides assurance that the nerve is intact and functioning prior to extubation.

51. Extracutaneous Manifestations of Mycosis Fungoides in the Head and Neck

Evan R. Reiter, MD, Richmond, VA
Wade K. Smith, MD, Richmond, VA
Wendy A. French, MD, Richmond, VA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the pathogenesis, diagnosis, and basic treatment of mycosis fungoides and its manifestations in the head and neck region.

OBJECTIVES: To present two unusual cases of mycosis fungoides (MF) with extracutaneous involvement in the head and neck and to review the pathogenesis and treatment of this rare disorder. **STUDY DESIGN:** Case series. **METHODS:** Retrospective chart review. **RESULTS:** Case 1: 48 year old male with an 18 year history of MF presented with increasing dysphagia and hoarseness. He was found to have an ulcerated mass involving the left vocal fold, biopsy of which revealed T-cell lymphoma. He was treated with external beam radiotherapy to a total tumor dose of 36 Gy, with rapid improvement in his symptoms, and resolution of the laryngeal mass. He subsequently experienced dramatic worsening of his cutaneous disease refractory to medical management. Case 2: 50 year old male with a 1 year history of nodular stage MF presented with several weeks of increasing dysphagia, dyspnea, and sore throat. Examination showed a smoothly mucosalized, nodular mass arising from both tonsils and the tongue base that obstructed the oropharyngeal airway. He underwent operative debulking via a tonsillectomy approach with dramatic improvement in his symptoms. He has now completed 40 Gy external beam radiotherapy and shows no sign of recurrent symptoms or pharyngeal mass lesion. **CONCLUSIONS:** Mycosis fungoides is a rare cutaneous non-Hodgkin lymphoma of T-cell origin. Extracutaneous disease occurs more commonly in the setting of advanced cutaneous disease and heralds more rapid disease progression and poor survival. While chemotherapy remains the mainstay of treatment for MF, external beam radiotherapy, as shown in the cases presented, can lead to prompt palliation of extracutaneous lesions.

52. Presentation of an Aneurysmal Bone Cyst in the Mandible of a Patient With Neurofibromatosis Type I

Jamie D. Sisk, MD, Jackson, MS
Richard O. Wein, MD, Jackson, MS
Jeffrey D. Carron, MD, Jackson, MS

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the differential diagnosis of mandibular based masses in patients with neurofibromatosis type I.

OBJECTIVES: The patient's clinical history, radiologic evaluation and histopathologic specimens will be reviewed to demonstrate the presentation of this infrequently diagnosed lesion in a population better known for tumor formation. **STUDY DESIGN:** Case report and limited review of the literature on the topic of mandibular masses in patients with neurofibromatosis type I. **METHODS:** After presenting progressive left facial swelling, radiologic imaging demonstrated an enlarging medullary mass of the mandibular ramus. Given the multiple potential benign and malignant diagnoses, operative biopsy was scheduled. **RESULTS:** With a transoral subperiosteal approach the outer cortex of the ramus was removed. The frozen section evaluation of the mass demonstrated findings suggestive of an inflammatory focus. The permanent histopathologic diagnosis was consistent with aneurysmal bone cyst. **CONCLUSIONS:** Inflammatory bone cysts of the mandible should be considered within the differential diagnosis of patients with neurofibromatosis type I and an expansile osseous mass.

53. Efficacy of Otopical and Water Precautions in Tympanostomy Tube Otorrhea; In Vitro Study

Lee P. Smith, MD, Miami, FL
Jennifer L. Smullen, MD, Miami, FL
Ramzi T. Younis, MD, Miami, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to better understand the physical properties governing water and otological penetration through tympanostomy tubes (TT). Participants should also be able to compare the permeability of various water solutions and otopical through a variety of TT.

OBJECTIVES: To use a physical model to evaluate the efficacy of preventive and therapeutic measures for tympanostomy tube (TT) otorrhea. **STUDY DESIGN:** An in vitro model was created to measure the ability of various water solutions and otopical to penetrate a variety of TT. **METHODS:** A TT was placed through a perforation (myringotomy) in a silastic sheet (tympanic membrane) fixed between the ends of two 1cc syringes (middle ear space and external auditory canal). Measurements were made of the maximum height various liquids (water, 2% soapy water, ocean water, Ofloxacin otic, Corticosteroid otic and Ciprofloxacin/dexamethasone otic) achieved before penetrating different TT (1.0mm or 1.27mm Paparella silicone, 1.14mm or 1.27mm Reuter Bobbin titanium, 1.27mm Collar Button fluoroplastic or 1.14 mm T-type C-flex). **RESULTS:** 2% soapy water was significantly more permeable than water and ocean water in all tubes studied. Ciprofloxacin/dexamethasone otic was significantly more permeable than water, ocean water and Ofloxacin otic in only the collar button fluoroplastic TT. Our results suggest that titanium TT are more permeable than other TT. Otherwise, otopical, water, and ocean water behaved similarly across all TT studied. **CONCLUSIONS:** Our results demonstrate that otopical and water-based solutions behave similarly with poor penetration through various TT. Ciprofloxacin/dexamethasone otic may have better penetration than other otopical. Titanium TT may be easier to penetrate than other TT. The efficacy of treating tube otorrhea may be improved by increasing otopical dosing volume and/or decreasing surface tension. Additionally, our model suggests water precautions with TT may be needless as a preventive measure for TT otorrhea.

54. Alignment of Manubrium Mallei: Relation to Arcus Zygomaticus, Frankfort Plane, Visual Plane, and Mastoid Pneumatization

Norman W. Todd, MD MPH*, Atlanta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to describe the variability of the clinical alignment of the manubrium mallei, the fair bilateral symmetry, and the possible association with the orientation of the lateral semicircular canal.

OBJECTIVES: To depict the alignment of the handle of the malleus, viewed clinically through the external auditory canal, relative to the zygomatic arch, the Frankfort plane, and a visual plane proxy, and relative the horizontal semicircular canal. Additionally, to assess bilateral symmetry and alignment relative to mastoid pneumatization. **STUDY DESIGN:** Postmortem anatomic dissection of 41 bequeathed adult crania without clinical otitis. **METHODS:** The line of the manubrium as viewed through the external ear canal was measured relative to the Frankfort plane, to a proxy of the visual plane, and to the zygomatic arch. Mastoid sizes were determined radiographically. In a subset of ten crania additionally studied by computed tomography, the manubrium position was checked relative the horizontal semicircular canal. **RESULTS:** The range of manubrium angles was at least 45 degrees relative to the zygomatic arch and Frankfort and visual planes; bilaterally symmetry was found (each $rs >.42$, $P <.01$). Relative the horizontal canals, the range of manubrium angles was 30 degrees; symmetry was suggested ($rs=.44$, $N=10$, $P=.20$). Alignment did not correlate with mastoid pneumatization. **CONCLUSIONS:** Manubrium orientation as viewed through the external auditory canal is not strictly understandable. Though bilaterally symmetrical, manubrium orientation is unrelated to mastoid pneumatization.

55. Unilateral Nasal Polyposis: Presentation, Surgical Management and Pathology

Shawn E. Tritt, BS, Augusta, GA
Kevin C. McMains, MD, Augusta, GA (Presenter)
Stilianos E. Kountakis, MD PhD*, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to: 1) discuss the differential diagnosis of unilateral nasal polyposis; and 2) discuss the presentation of unilateral nasal polyposis.

OBJECTIVES: To determine the etiology, presentation, pathology and management of unilateral nasal polyposis (UNP). **STUDY DESIGN:** Retrospective chart review. **METHODS:** A retrospective analysis was completed on 301 consecutive patients with nasal polyposis that underwent functional endoscopic sinus surgery from 1995-2004. Of the charts reviewed, 46 patients were identified with UNP. In this group there were 28 males and 18 females with a mean age at presentation of 34.85 years old. Pathologic diagnosis was not available for 2 patients so there were 44 UNP patient records for analysis. Presenting symptoms, surgical findings and pathology were analyzed. **RESULTS:** All 44 patients underwent surgical management for their symptoms and specimens were sent for pathologic evaluation. There were 17 cases of chronic rhinosinusitis, 15 cases of allergic fungal sinusitis, 7 cases of inverting papilloma, 2 squamous cell carcinoma, 1 esthesioneuroblastoma, 1 mucocele and 1 HPV type papilloma. The only presenting symptom that correlated with the presence of inverted papilloma or neoplastic process in our patients with UNP was epistaxis. **CONCLUSIONS:** Chronic rhinosinusitis, allergic fungal sinusitis, inverting papilloma, and other neoplasms account for the majority of unilateral nasal polyposis cases and must be considered when a patient presents with symptoms of unilateral polyps. A careful history and endoscopic exam play a key role in identifying possible disease processes and proper management.

56. Cervical Sympathetic Chain Paraganglioma: A Case Report and Review of the Literature

Anthony T. Tucker, MD, Tampa, FL
Chau T. Nguyen, MD, Tampa, FL
Tapan A. Padhya, MD, Tampa, FL

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the clinical presentation of paragangliomas of the cervical sympathetic chain.

OBJECTIVES: Tumors of extra-adrenal paraganglionic tissue are well described in the literature. Extra-adrenal paragangliomas have been described occurring intravagal, aortic sympathetic, viscerosympathetic, or branchiomeric. The most common locations in the head and neck are, in descending order, jugular bulb, carotid body, and vagus nerve. **STUDY DESIGN:** Review of the literature and retrospective chart review. **METHODS:** Retrospective chart review and review of the literature. A 42 year old female presented to the head and neck service with a 3 year history of a painless slow growing right neck mass. Surgical resection of this mass was undertaken after preoperative angiography and embolization of the tumor. **RESULTS:** Histopathology was consistent with a paraganglioma involving the cervical sympathetic chain posteriorly. The patient did well postoperatively and her cranial nerves were intact on examination. She did however, have mild right-sided ptosis suggestive of involvement of the sympathetic chain. **CONCLUSIONS:** We describe a case report of a paraganglioma arising from the cervical sympathetic chain in a patient presenting without signs and symptoms of Horner's syndrome. These rare tumors of the head and neck typically present as slow growing masses without other associated symptoms. Although most commonly involving the jugular bulb, carotid body, or vagus nerve, the cervical sympathetic chain should be considered in the differential diagnosis when preoperative imaging studies suggest paraganglioma.

57. Small Cell Carcinoma of the Submandibular Gland: A Rare Small Blue Cell Tumor

David M. Walters, MD, Augusta, GA
Stewart C. Little, MD, Augusta, GA
Christine G. Gourin, MD, Augusta, GA
Richard B. Hessler, MD, Augusta, GA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to discuss the differential diagnosis of small round blue cell tumors of the head and neck and demonstrate knowledge of the basic immunohistochemical evaluations used to differentiate each of these tumors.

OBJECTIVES: Primary small cell carcinoma of the submandibular gland is an extremely rare diagnosis accounting for less than 1% of all major salivary gland malignancies with greater than 80% arising from the parotid. We report the eleventh case within the submandibular gland and discuss the differential diagnosis of small round blue cell tumors including lymphoma, Ewing sarcoma, melanoma, esthesioneuroblastoma, rhabdomyosarcoma, Merkel cell carcinoma, neuroblastoma, and small cell carcinoma. We also discuss the important role that immunohistochemistry (IHC) plays in differentiating and diagnosing these disease processes. **STUDY DESIGN:** Case report. **METHODS:** A 46 year old female presents with a 12 month history of an enlarging right neck mass, dysphagia, and hoarseness. Fine needle aspiration is interpreted as possible non-Hodgkin's lymphoma. **RESULTS:** Frozen section analysis of the right submandibular mass consistent with a small round blue cell tumor. Flow cytometry showed less than 1% CD45 positive cells and immunohistochemical evaluation demonstrated positive staining for synaptophysin, chromogranin, anti-cytokeratin (Cam 5.2) and neuron specific enolase. The diagnosis was confirmed as primary poorly differentiated small cell carcinoma of the submandibular gland. **CONCLUSIONS:** Primary small cell carcinoma of the submandibular gland is a seldom encountered diagnosis; however, other small round blue cell tumors are identified more frequently. The acronym LEMONS may prove helpful in remembering the etiologies of small round blue cell tumors of the head and neck. IHC has improved the accuracy and timeliness of diagnosis when confronted with a small round blue cell tumor.

58. Comparison of the Tympanomastoid Suture to the Posterior Belly of the Digastric Muscle as Landmarks in Identification of the Facial Nerve in Cadavers and Surgical Patients

Robert L. Witt, MD*, Wilmington, DE
Gregory S. Weinstein, MD*, Philadelphia, PA

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to determine the closest surgical landmark to the facial nerve in parotid surgery.

OBJECTIVES: To prove that the tympanomastoid suture (TMS) is a significantly closer anatomic landmark to the facial nerve than the posterior-superior margin of the posterior belly of the digastric muscle (PBD) in parotid surgery. **STUDY DESIGN:** Prospective study of cadaver specimens and live patients. **METHODS:** A prospective study of 14 cadaver specimens and 22 live patients comparing the closest measured distances between the TMS and PBD to the facial nerve. **RESULTS:** The mean closest distances from the TMS and PBD to the facial nerve were 1.8mm (range 0-4mm) and 12.4mm (range 7-17mm), respectively ($p < 0.05$) for cadavers. The mean closest distances in live patients from the TMS and PBD to the facial nerve were 2.0mm (range 0-4mm) and 10.7mm (range 5-14mm), respectively ($p < 0.05$). **CONCLUSIONS:** Facial nerve identification and preservation is the key to successful parotid surgery. The TMS is a significantly closer and less variable anatomic landmark compared to the PBD both in cadaver dissection and in live patients.

59. Factors Influencing the Resolution of Otitis Media With Effusion in a Cohort of School Age Children in A Rural Area: A Prospective Study

John E. Xenellis, MD, Athens, Greece
John P. Paschalidis, MD, Athens, Greece
Christos C. Georgalas, MRCS, London, UK
Dimitris J. Davilis, MD, Athens, Greece
Antonios A. Tzangaroulakis, MD, Athens, Greece
Eleftherios A. Ferekidis, MD, Athens, Greece

EDUCATIONAL OBJECTIVE: At the conclusion of this presentation, the participants should be able to understand current controversies on the natural course of otitis media with effusion.

OBJECTIVES: Otitis media with effusion (OME) is primarily a disease of young children, with its peak incidence at roughly age 1 year. We did the study in order to assess reasons for persistence of OME in a cohort of school age children, a group with a much lower incidence of OME and in which many of the generally accepted etiological factors for OME may not apply. **STUDY DESIGN:** Prospective cohort study. **METHODS:** A cohort of 250 school age children with unilateral or bilateral OME, identified through screening of 5121 asymptomatic children was examined 16 months following their original diagnosis. All children were assessed for a variety of demographic, paternal and medical factors that could be associated with OME persistence. Examination included tympanometry, acoustic reflexes and a full otolaryngology examination. **RESULTS:** There were no significant differences between children with persistent unilateral or bilateral disease. Gender, blood group, gestational age and weight, history of breast feeding, paternal education level and smoking history, history of allergy and previous use of antibiotics or surgery during the study period (myringotomy, insertion of ventilation tubes or adeno tonsillectomy) were not associated with persistence of OME. On multivariate logistic regression, the only factors identified as being associated with OME persistence were an episode of AOM during the study period (odds ratio 2.75 (95% CI: 1.13 to 8.17), $p = 0.04$) and younger age (odds ratio 0.53 (95% CI: 0.32 to 0.79), $p = 0.002$ for each 2 years of increase in age). **CONCLUSIONS:** The vast majority of school age children diagnosed with OME through screening will be free of disease 16 months later. It appears that most factors associated with persistence of OME in younger children do not apply any more to children of school age. The threshold for intervention however should be lower in (relatively) younger children and children with superimposed episodes of acute otitis media.