BOCA RATON COSM

Combined Otolaryngological Spring Meetings

Boca Raton Resort & Club

American Rhinologic Society

Program Abstracts 2005

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Mission Statement

The American Rhinologic Society's mission is to serve, represent and advance the science and the ethical practice of rhinology. The Society promotes excellence in patient care, research and education in Rhinology and Sinusology. The American Rhinologic Society is dedicated to providing communication and fellowship to the members of the Rhinologic Community through ongoing medical education, patient advocacy, and social programs.

Educational Objectives

The program will consist of presentations from abstracts selected by the program committee through a blinded review process. The specific objectives are as follows:

- The participants should become more familiar with the diagnostic and treatment modalities in patients with chronic rhinosinusitis.
- The participants should gain better understanding of the basic science and pathophysiology of chronic rhinosinusitis.
- The participants should understand more completely the impact of various surgical procedures for chronic rhinosinusitis.
- The participants should have more insight into advanced rhinologic techniques and procedures for treatment of neoplastic disease and pathology of the anterior of skull base.

Target Audience

Board certified and board eligible physicians as well as residents-in-training in otolaryngology-head and neck surgery.

Statement of Need

The most common chronic disease in the United States is chronic sinusitis and is notoriously difficult to treat. Further study both on the basic science level and in clinical matters is necessary and

required to create greater understanding of the pathogenesis of this crippling disease and ways to improve treatment outcomes.

Activity Goal:
It is the goal of this activity to improve patient outcomes and care of patients with chronic sinusitis by providing medical information on group studies and findings in research and clinical practice.

Accreditation Statement:
The American Rhinologic Society is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The American Rhinologic Society designates this educational activity for a maximum of 8 category 1 credit(s) toward the AMA Physician's Recognition Award. Each physician should claim only those hours that he/she actually spent on the educational activity.

Corporate Sponsors
The American Rhinologic Society wishes to thank the following Corporate Sponsors for their unrestricted grants which in their entirety are to award research grants. These sponsors do not contribute to the continuing medical education of these meetings.

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Conflict of Interest Statement:
The "Faculty Disclosure Policy" of The American Rhinologic Society requires that presenters participating in a CME activity disclose to the audience any significant financial interest or other relationship an author or presenter has with the manufacturer(s) of any product(s) discussed in an educational presentation. Presenters are required to disclose any significant relationship(s) with a pharmaceutical or equipment company which might pose a potential, apparent or real conflict of interest with regard to their contribution to the activity, and any discussions of unlabeled or investigational use of any commercial product or device not yet approved for use in the United States.

The following faculty/presenters have indicated these disclosures:

John DelGaudio, MD	AstraZeneca - Grant Support
Larry Duberstein, MD	Clerical help in writing paper and data collection. My presentation will include discussion of Zileuton for Prevention of Nasal Polyp Recurrence.
Tony Kille, MD	Project mentor (Dr. Diane Heatley) serves as Vice President of Med-Systems, Inc, maker of SinuCleanse reti pots.
Raymond Sacks, MD	Medronic Xomed - Sponsored Equipment for Study
Timothy Smith, MD	National Institutes of Health Grant Funding

The following faculty have indicated that they have no disclosures

Alessandro de Alarcon, MD
Vijay Anand, MD
Pete Batra, MD
Miguel Neil Bravo, MD
Seth Brown, MD
John DelGaudio, MD
John DelGaudio, MD
Larry Duberstein, MD
Marc Dubin, MD
Karen Fong, MD
James Hadley, MD
Kim Hewitt, MD
Alexis Jackman, MD
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Frederick Kuhn, MD
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Joseph Raviv, MD
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2002 – 2003	Donald C. Lanza, M.D.
2003 – 2004	James A. Hadley, MD
2004 – 2005	Joseph B. Jacobs, MD

Deceased

ARS SCHEDULE FOR COSM 2005

Boca Raton Resort & Club
Boca Raton, FL
May 12-14, 2005

THURSDAY 5/12/05

4:00 – 5:00	Patient Advocacy Committee Meeting (Room/Building: Kingman NE-Tower)
3:00 – 5:30	Executive Committee Meeting (Room/Building: Bassford-Tower)
5:30 – 8:30	Board of Directors Meeting (Room/Building: Addison Ballroom East-Mizner)

FRIDAY 5/13/05

1:00 – 5:00	Scientific Meeting (Room/Building: Estate Ballroom-Mizner)
6:00 – 11:00	Corporate Affiliates Reception (Room/Building: Valencia-Cloister)

SATURDAY 5/14/05

8:00 – 12:00	Scientific Meeting (Room/Building: Estate
12:30 – 2:00	Fellowship Directors Meeting (Room/Building: Tower Card-Tower) Ballroom – Mizner)Grand Pre-Assembly-Mizner)
5:30 – 7:00	Combined Poster Session (Room/Building:

GENERAL MEETING ROOMS:

Speaker Ready Room:
Veranda Salon I

Exhibit Hall:
Grand Ballroom

Registration:
Registration North

Press Office:
Veranda Salon III

Headquarters Office:
Veranda Salon II

Spouse Hospitality Lounge:
Kingman SE

Upcoming Dates

September 24, 2005
ARS 51st Annual Meeting

American Rhinologic Society
COSM 2005 — Boca Raton Resort & Club
Boca Raton, FL

May 13, 2005 - May 14, 2005

Friday May 14, 2005

1:00 pm – 1:10 pm

Welcome and Introduction

Joseph B, Jacobs, MD, President
Michael Sillers, MD, President-Elect

Moderators:

John DelGaudio, MD
Joseph Han, MD
1:10 pm

(Abstract ID # 864)

"Evidence Supporting Endoscopic Sinus Surgery In The Management Of Adult Chronic Rhinosinusitis"

Timothy L. Smith, MD
Peter Batra, MD
Allen Seiden, MD
Maureen Hannley, PhD
Milwaukee, WI

Disclosure: No disclosures reported

Objectives: Evidence based medicine calls for a critical evaluation of the scientific evidence for treatments of disease. This report synthesizes the available evidence on the use of endoscopic sinus surgery (ESS) in the management of adult chronic rhinosinusitis (CRS) examining the clinical question: "In adults with CRS who have failed medical management, does ESS improve symptoms and/or quality of life (QOL)?"

Methods: The American Rhinologic Society and the American Academy of Otolaryngology convened a steering committee composed of the authors. Primary research articles evaluated for this report were identified using appropriate search terms and a Medline search. Two authors independently reviewed each article. Articles were assigned an evidence level based on accepted guidelines (level 1= randomized trials; level 2= prospective cohort studies with comparison group; level 3= case-control studies; level 4 = retrospective case series; level 5 = expert opinion).

Results: We identified 586 abstracts to review, retrieved 75 articles for full review and included 45 articles in our report. The vast majority of articles represented level 4 evidence (n=42) while two articles represented level 5 evidence. One article was identified that qualified for level 2 evidence. All of these articles generally supported the finding that ESS improves symptoms and/or QOL in adult patients with CRS.

Conclusions: There is substantial level 4 evidence with supporting level 2 evidence that ESS is effective in improving symptoms and/or QOL in adult patients with CRS. Future research efforts should focus on prospective studies that include appropriate comparison groups in their design.

1:17 pm

(Abstract ID # 866)

"Endoscopic Transphenoidal Pituitary Surgery with Real Time Intraoperative MRI (IMRI)"

Vijay Anand, MD
Theodore Schwartz , MD
David Henry HIltzik, MD
Ashutosh Kacker, MD
New York, NY

Disclosure: Dr. Anand is a consultant for GE Medical Systems and Sinucare.

Objective: To report and demonstrate the technique, results, and complications of combined endoscopic and IMRI surgical treatment of pituitary disease from both a technical and surgical perspective.

Methods: Retrospective chart review of 10 endoscopic, endonasal resections of 10 pituitary macroadenomas using the Polestar N-10 IMRI (Medtronic) system in a tertiary healthcare facility. The patient demographics, tumor measurements, and postoperative symptoms and complications were assessed. The effect of the magnetic field on the cathode ray tube (CRT)

screen, the image quality of the IMRI images, and IMRI detection of residual tumor were also evaluated. Results: IMRI images were obtained in all cases and were of sufficiently high quality to demonstrate adequate decompression of the optic chiasm and the removal of all suprasellar tumor. However, there was significant distortion of the CRT screen regardless of the viewing angle, which was overcome with a wall-mounted plasma screen. Residual tumor was found with IMRI and resected endoscopically in three cases. In two other cases, suspected residual tumor on IMRI was examined endoscopically and found to be normal post-operative change. In two cases no tumor was seen on the IMRI. Five patients who had preoperative progressive visual loss preoperatively improved dramatically post resection and two who had increased insulin growth factor-1 (IGF-1) preoperatively normalized postoperatively. No delayed CSF leaks or any other complications occurred.

Conclusion: Combining intraoperative endoscopy and IMRI is an effective surgical modality for pituitary surgery. Each technology provides complimentary information, which can assist the surgeon in safely maximizing the extent of resection.

1:24 pm

(Abstract ID # 869)

"Antibiotic Sensitivities of Coagulase Negative Staphylococcus from Purulent Sinus Secretions"

Marc G. Dubin, MD
Frederick A. Kuhn, MD
Robert E. Sonnenburg, MD
Christopher T. Melroy, MD
Savannah, GA

Disclosure: No disclosures reported.

Introduction: Culture directed antibiotic therapy for chronic bacterial sinusitis is imperative. Frequently, however, sinus cultures are reported as "coagulase negative staphylococcus (CNS)" which microbiologists view as normal and therefore antibiotic sensitivities are not provided.

Methods: From January 1, 2001 through June 30, 2001 all cultures that were reported as CNS were re-examined by the microbiology lab to determine the antibiotic sensitivities.

Results: During this six month period, 53 cultures were reported as CNS. Of the organisms that were tested against the following specific antibiotics, 76% were resistant to amoxicillin/

clavulinic acid, 76% were resistant to oxicillin, 76% were resistant to cefazolin, 84% were resistant to ciprofloxacin and 79% were resistant to levafloxacin. CNS was least resistant to trimethoprim/sulfa (36%), tetracycline (26%), gentamycin (18%), and vancomycin (0%). When only the cultures that grew in heavy or moderate concentrations were evaluated (n=16), the resistance pattern did not change compared to those that had rare/light growth (n=37).

Conclusion: Reports of CNS growth without antibiotic sensitivities may result in inadequate antimicrobial therapy. If considered a potential true pathogen, this organism has a high incidence of antibiotic resistance and may be difficult to treat without knowledge of antibiotic sensitivities.

1:31 pm

Discussion

1:40 pm

(Abstract ID 870)

"Association of Nasopharyngeal and Laryngopharyngeal Reflux with Post-Nasal Drip Symptomatology"

John DelGaudio, MD
Sarah Wise, MD
Atlanta, GA

Disclosure: Astra Zeneca - grant support, speakers bureau Medtronic Xomed - consultant Schering Plough - speaker's bureau

Introduction: Patients often report post-nasal drip (PND), but objective rhinosinusitis and allergy findings are frequently absent. In this study, we evaluate the association between PND and pharyngeal reflux.

Methods: Sixty-eight total patients underwent 24-hour pH testing, including chronic rhinosinusitis (CRS) patients persistently symptomatic following endoscopic sinus surgery (ESS), CRS control patients successfully treated by ESS, and normal controls. The pH probes contained nasopharyngeal (NP), upper esophageal sphincter (UES), and lower esophageal sphincter (LES) sensors. Patients also completed the Reflux Symptom Scale (RSS) and Sinonasal Outcome Test-20 (SNOT-20) questionnaires. The survey items addressing PND symptomatology were compared to NP reflux below pH 4

and pH 5 (defined as >1 events), and UES reflux (defined as >7 events).

Results: Pearson analyses revealed a positive correlation of r = .86 between the RSS and SNOT-20 for PND items. For NP reflux below pH 4, no significant difference existed between those patients with and without reflux for PND symptomatology on the RSS or SNOT-20 ($p > .05$). However, for NP reflux below pH 5, patients with reflux exhibited significantly more PND symptoms on both the RSS ($p = .018$) and the SNOT-20 ($p = .030$) than those patients without reflux. Finally, patients with UES reflux had significantly more PND symptomatology on the SNOT-20 ($p = .030$) compared to those without UES reflux. However, PND symptomatology did not differ significantly between UES reflux groups on the RSS ($p > .05$).

Conclusion: Objective evidence of NP and UES reflux exists in patients reporting PND; reflux treatment may reduce PND complaints.

1:47 pm

(Abstract ID# 871)

"Systemic Absorption of Gentamicin Nasal Irrigations"

Wesley Whatley, MD
Charles MacDonald, MD
LeAnn Fox, RN
Rakesh Chandra, MD
Memphis, TN

Disclosures: No Disclosures reported.

Objective: To determine if gentamicin nasal irrigation is systemically absorbed, and to identify any ototoxic side effects related to its use. Design: Retrospective review of 12 patients treated with gentamicin nasal irrigations (30 cc of 80 mg/L solution used twice daily).

Methods: Serum gentamicin levels were assayed after the course treatment. Pure tone audiometry (PTA) and distortion product otoacoustic emissions (DP-OAE) at 7280, 5133, 3640 and 2560 Hz were obtained before and after therapy. Results: Twelve patients (age 4 to 74, mean 43) with chronic rhinosinusitis were treated for 3 to 15 weeks (mean 7 weeks). All patients had undergone previous endoscopic sinus surgery. Eight patients had pretreatment cultures that grew resistant organisms (Pseudomonas, Proteus, or methacillin resistant Staphylococcus aureus), and three patients had cystic fibrosis. Ten of 12 patients

(83%) had detectable serum levels of gentamicin. The mean gentamicin level for patients with detectable serum levels was 0.42 mcg/ml (range 0.3 to 0.7 mcg/ml). Four of 12 patients (33%) had serum gentamicin levels within the normal range for gentamicin trough (0.5 to 1.5 mcg/ml). Comparison of pre- and post- treatment audiologic data revealed no significant change in PTA or DP-OAE, except for the right ear at 8000 Hz on PTA ($p=0.035$) where a mean of 7dB loss was observed. No patient reported vertigo at any time during treatment.

Conclusion: Gentamicin nasal irrigation may be systemically absorbed, but the otologic consequences of this finding are questionable. Nonetheless, patients receiving gentamicin nasal irrigations should be counseled regarding this possibility.

1:54 pm

(Abstract ID# 874)

"Characterization of "Normal Respiratory Flora" in Purulent sinus Secretions; "Normal Flora" Is Not Necessarily "Normal"

Frederick Kuhn, MD
Marc Dubin, MD
Ronnie Swain, MD
Christopher Melroy, MD
Savannah, GA

Disclosures: No disclosures reported.

Introduction: Chronic bacterial sinusitis treatment in the era of increasing antibiotic resistance is problematic. Culture directed therapy is crucial, however, sinus cultures are often reported as "normal flora" resulting in a therapeutic dilemma.

Methods: For six consecutive months, all sinus cultures from previously operated chronic sinusitis patients that were reported as "normal respiratory flora" were sub-cultured for specific bacteria. Results: During this six month period, nineteen cultures initially reported as normal flora were further speciated with 29 resultant pathogenic organisms. The most common organism was coagulase negative staphylococcus (CNS) (n=11). Additional organisms included Staphylococcus aureus (n=4), Alpha hemolyltic streptococcus (n=3), Corynbacterium (n=3), Pseudomonas (n=2), Enterococcus (n=2), Streptococcus pneumonia (n=2), Klebsiella (n=1), and Bacteroides fragilis (n=1). Of the organisms initially classified as "normal flora" 73% were resistant to amoxicillin/clavulinic acid, 38% were resistant to clindamycin, 62% were resistant to ciprofloxacin and 58% were resistant to levafloxacin.

Conclusion: Reports of "normal flora" from grossly purulent sinus secretions may be misleading and lead to inappropriate antimicrobial therapy. It is possible that a true pathogen can be found with speciation of all organisms in the mixed culture. Furthermore, these organisms exhibit a high incidence of antibiotic resistance. Increased bacterial resistance and changes in bacterial flora have made empiric treatment of sinusitis more difficult. Culture directed therapy has become much more important, however, cultures reported as "normal flora" confound the problem.

2:01 p.m.

Discussion

Moderators:

Peter Hwang, MD
Kelvin Lee, MD

2:10 pm

(Abstract ID # 880)

"Minocycline Accelerates Recovery after Olfactory Axotomy in Mice"

Joseph Raviv, MD
Alan Robinson, PhD
Claus-Peter Richer, MD, PhD
David Conley, MD
Chicago, IL

Disclosure: No disclosures reported.

Introduction: Apoptotic death of olfactory sensory neurons (OSNs) has been implicated in most cases of peripheral smell loss. Minocycline, an antibiotic with anti-apoptotic properties, is currently under trial for the management of a wide range of other neurologic disorders associated with increased apoptosis; effects on olfaction are unknown. The standard experimental model of OSN apoptosis is surgical axotomy resulting in the rapid death of all neurons within 72 hours; recovery occurs by the regeneration of new OSNs over the next several weeks. Decreased OSN death and more rapid electrical recovery following axotomy have been demonstrated in mice wherein apoptosis was genetically inhibited. In the current study, minocycline will be utilized in an attempt to duplicate the improved outcome seen in the genetically inhibited mice.

Methods: Unilateral olfactory axotomy was performed in two groups of mice: controls and those treated with minocycline (1 mg/kg) 24 hours prior to axotomy and daily for 4 days post-op. Electrical olfactory responses and histology were assessed at days 0, 2, 12, 15, 18, 19, and 21 post injury.

Results: Anatomic and electrical recovery in minocycline treated mice occurred earlier than in wild type mice, similar to results in genetically altered mice.

Conclusion: Minocycline increases the speed of recovery following olfactory axotomy in mice. These findings support the following hypothesis: minocycline blocks OSN apoptosis post axotomy and surviving neurons re-sprout axons and synapse with the bulb. Minocycline may be useful in the management of a wide range of olfactory disorders.

2:17 pm

(Abstract ID # 884)

"Quantitative Comparison of Nasal Irrigation Devices Based on Mucociliary Transport Time"

Tony Kille, MD
Diane Heatley, MD
Glen Leverson,
Madison, WI

Disclosure: Dr. Heatley is Vice President of Med-Systems, Inc., the manufacturer of SinuCleanse. All devices and supplies used in this study were donated by the respective companies as samples.

Introduction: Chronic rhinosinusitis is associated with alterations in the normal circulation of mucus through the sinuses and nasal cavity. This circulation is dependent upon the mucociliary transport (MCT) system. More rapid MCT is associated with improved sinonasal symptoms. Clinical studies support the use of nasal irrigation in the treatment of chronic sinusitis, but the ideal mode of delivery has not been established. The purpose of this study was to compare four commercially available irrigation devices based on changes in MCT time.

Methods: MCT can be quantified using the saccharin clearance test (measuring the time to perceive a sweet taste after placing several particles of saccharin on the anterior portion of the inferior turbinate). Subjects participated in four sessions. During each session, MCT was measured at baseline, and at 10 and

60 minutes following nasal irrigation using one of the following devices: 1) Hydropulse™ (pulsating positive pressure flow), 2) Sinus Rinse™ (squeeze bottle), 3) SinuCleanse™ (neti pot), and 4) Rinoflow™ (inhaled mist). MCT time was recorded in seconds and converted to percent change from baseline.

Results: Thirty-five subjects completed all sessions. Irrigation with Hydropulse™ and SinuCleanse™ resulted in faster MCT both at 10 and 60 minutes. Irrigation with Sinus Rinse™ resulted in faster MCT at 10 minutes but not at 60 minutes. Irrigation with Rinoflow™ resulted in no statistically significant change in MCT. Comparing irrigation devices to each other, however, revealed no statistically significant difference between them. Conclusions: Irrigation hastens MCT using nearly all devices.

2:24 pm

(Abstract ID # 886)

"Prediction of Response to Surgery in Allergic Patients with Chronic Sinusitis in Children"

Hassan H Ramadan, MD
Morgantown, WV

Disclosure: No disclosures reported.

Objective: Allergic rhinitis (AR) is an important morbid condition in children with chronic rhinosinusitis (CRS). The outcome of endoscopic sinus surgery (ESS) in children with AR is not well known. The study goal was to determine whether children with AR who are undergoing (ESS) will have a poor outcome.

Design: We conducted a cohort study in a tertiary care children's hospital setting.

Patients and Methods: The study population consisted of 141 patients who underwent ESS between January 1994 and December 2002. The mean age was 7 years (range, 3 to 13). The outcome of ESS was measured at least one year after the operation. A questionnaire was mailed to the caretakers to measure success. Those who required revision subsequently were considered as failures.

Results: Multivariate logistic regression analysis was performed with allergic rhinitis as an independent variable and outcome measured as success of procedure. The overall success rate was 80%. Univariate analysis showed that children with allergy had a 77% success rate compared to children with no allergy who had an 84% success rate (P = 0.25). Children with AR who were on treatment prior to surgery had an 84% success rate compared to 65% for those children with AR but were not treated (P=0.02).

Conclusion: ESS in children with allergic rhinitis does not have a poorer outcome. Treatment of the allergy prior to surgery, however may improve the success of ESS.

2:31 pm

Discussion

2:40 pm

(Abstract ID # 887)

"The Role of the Underlying Bone in Inverting Papilloma"

Alexis Hope Jackman, MD
James Nathan Palmer, MD
Micheal D Feldman, MD
Alexander Grant Chiu, MD
Philadelphia, PA

Disclosure: No disclosures reported.

Introduction: Inverting Papilloma (IP) is a benign but locally aggressive sinonasal tumor. Rate of recurrence of IP has largely been attributed to incomplete tumor resection. Successful surgical management depends on preoperative and intraoperative identification and resection of tumor margins especially the deep margin. In this paper, preoperative radiological studies and histopathological specimens are examined to better understand the involvement of the bone underlying an inverted papilloma.

Materials & Methods: A prospective study of six patients with IP treated with endoscopic or endoscopic-assisted resection over an eight-month period was conducted. Preoperative radiographic studies were analyzed with respect to bony changes in the area of the tumor pedicle. Intraoperative pathologic specimens, which were taken as a wedge of bone with an attached piece of tumor pedicle, were reviewed by a pathologist. Results: Radiographic osteitic bony changes in the region of the tumor pedicle were evident on CT scans. On pathologic anaylsis, IP was seen to extend into bony crevices but no isolated rests of epithelium were embedded within the bone in all six cases.

Conclusion: Despite the lack of histopathologic findings of tumor involvement at the bony interface, radiographic osteitic bony changes were seen at site of tumor attachment. The irregularity of the surface of the bone at the interface between tumor mucosa may play a role in the rate of recurrence, and having a direct effect on the intraoperative handling of the deep tumor margin.

2:47 pm

(Abstract ID # 888)

"Efficacy of Draf I Surgery for Chronic Frontal Sinusitis"

Joseph Han, MD
Samuel Becker, MD
Thuy-Anh Nguyen, BA
Charles Gross, MD
Charlottesville, VA

Disclosure: No disclosures reported.

Introduction: Although Draf I surgery is commonly used to address chronic frontal sinusitis, the efficacy of this procedure for frontal sinus disease has not been sufficiently demonstrated. The objective of this study was to determine the effectiveness of Draf I surgery for chronic frontal sinusitis.

Methods: Patients with both clinical and radiographic evidence of chronic frontal sinusitis who underwent a Draf I procedure as initial surgical treatment between 1998 and 2004 were reviewed retrospectively. Data on severity and location of mucosal thickening was collected from CT scans using the Lund-Mackay scale. Demographic data, comorbidities, management, post-operative recovery, and follow-up data were collected.

Results: Seventy-seven patients, representing 121 diseased frontal sinuses met inclusion criteria. Respiratory comorbidities were asthma alone (8.3%), asthma and polyps (6.6%), aspirin triad (5.8%), and cystic fibrosis (0.8%). Nineteen (15.7%) of the 121 frontal sinuses belonged to smokers. Fourteen (11.5%) of 121 frontal sinuses exhibited post-operative clinical and radiographic evidence of disease. Of these 14 frontal sinuses, 10 (8.3%) underwent revision surgery. Smokers were no more likely to undergo revision procedures than non-smokers ($p<0.05$). Frontal sinuses belonging to patients with aspirin triad, or with both nasal polyposis and asthma were more likely to fail Draf I surgery ($p<0.05$). Average follow-up time was 14 months.

Conclusions: The Draf I procedure is effective 88.5% of the time as initial surgery for chronic frontal sinusitis in this study. Patients with aspirin triad, or both asthma and polyposis are more likely to fail this procedure and may require more aggressive surgical treatment.

2:54 pm

(Abstract ID # 890)

"Recalcitrant Rhinosinusitis With Polyps Is Associated With Altered Expression Of Genes Associated With Innate Immunity"

Andrew P. Lane, MD
Quynh-Ai Truong-Tran,
Robert A. Schleimer, PhD
Baltimore, MD

Disclosure: No disclosures reported.

Introduction: The role of innate immunity in the pathophysiology of chronic rhinosinusitis is poorly understood. In this study, sinonasal expression of toll-like receptors (TLRs), complement components, and serum amyloid A (SAA) was examined in patients undergoing sinus surgery for chronic rhinosinusitis (CRS).

Methods: Ten controls and thirty subjects with medically unresponsive CRS were prospectively enrolled prior to undergoing endoscopic sinus surgery. Ethmoid mucosa was obtained and processed for RNA extraction. Real-time PCR was employed to determine expression of TLRs and acute phase proteins. Subjects were followed for at least 6 months post-operatively with nasal endoscopy to assess for polyp recurrence. Results: TLR and acute phase protein mRNA was detected in both control and CRS ethmoid mucosa. As compared to controls, CRS was associated with significantly lower expression of TLR3, 5, 6, 7, 8, 9 and 10. Patients with early recurrence of polyps after surgery had significantly greater expression of TLR9 and SAA, and decreased expression of TLR2, when compared to patients who did not. There was a trend towards increased acute phase protein expression in the recalcitrant CRS group that did not achieve statistical significance. Conclusions: This study identifies differences in the expression of innate immune system components in the sinonasal mucosa of CRS patients who experience early recurrence of polyps despite aggressive medical and surgical therapy. This study also demonstrates reduced expression of several TLRs in CRS as compared to controls. Whether these differences play a role in pathogenesis or are merely manifestations of disease activity requires further investigation.

3:01 pm

Discussion

3:10 pm – 3:30pm

Break

3:30 pm – 4:00 pm

Panel: Inflammatory Mediators in CRS

Jan Gosepath, MD
Bradley Marple, MD
Moderators:

James Palmer, MD
Richard Orlandi, MD
4:00 pm

(Abstract #891)

"Expression of Cycloxygenase and Lipoxygenase Enzymes In Nasal Mucosa of Cystic Fibrosis Patients"

Jonathan Owens, MD
Kenneth Shroyer, MD, PhD
Todd Kingdom, MD
Denver, CO

Disclosures: No disclosures reported.

Introduction: A large proportion of cystic fibrosis patients suffers from chronic rhinosinusitis. To date no studies have evaluated the contribution of arachidonic acid metabolites to this pathophysiology. Our study was performed to evaluate the expression of cyclooxygenase and lipoxygenase enzymes in nasal mucosa of cystic fibrosis patients.

Methods: Expression of the enzymes cycloxygenase-1 and -2 (COX-1 and COX-2), 5-lipoxygenase (5-LO), 12-lipoxygenase (12-LO), and 15-lipoxygenase (15-LO) was evaluated in archived nasal mucosal tissue of cystic fibrosis (CF) patients using immunohistochemical techniques. These results were compared to a control group of patients without history of cystic fibrosis or rhinosinusitis.

Results: Characteristic staining patterns of epithelium and submucosal glands were noted for each enzyme. Statistically significant ($p < 0.05$) differences in staining of columnar epithelium were noted for COX-2 (apical cell layer and gland cytoplasm) and 12-LO (full-thickness cytoplasm and nucleus) between control and CF specimens. Significant differences of staining of submucosal glands were noted for COX-2 (cytoplasm) and 12-LO (cytoplasm) were noted between control and CF specimens. No significant differences were noted for the staining of COX-1, 5-LO, or 15-LO between the groups. Conclusions: Significant differences in nasal mucosal expression of COX-2 and 12-LO enzymes exist between cystic fibrosis patients and controls. This suggests differences in arachidonic acid metabolism and inflammatory mediator production between these two groups. Whether these differences are genotypic or occur in response to preexisting inflammation is uncertain and merits further study.

4:07 pm

(Abstract ID # 895)

"Differences in Skull Base Defect Size: Endoscopy versus Computed Tomography"

John DelGaudio, MD
Nicolas McLean, MD
Sarah Wise, MD
Patricia Hudgins, MD
Atlanta, Georgia

Disclosure: Astra Zeneca - speaker's bureau Medtronic Xomed - consultant Schering Plough - speaker's bureau

Background: Endoscopic skull base defect repair is performed frequently among experienced rhinologic surgeons. High-resolution computed tomographic (CT) scans are paramount to preoperative planning. We compared skull base defect size on axial CT scans and reformations to operative findings.

Methods: A retrospective chart and film review of patients undergoing skull base defect repair was performed to compare defect size on endoscopy to defect size on CT scan. A neuroradiologist, blinded to endoscopy findings, reviewed all scans. CT was performed at 0.625-3.00 mm slice thickness in the axial plane, with sagittal and coronal reformations generated from the axial data set. Skull base defect measurements were performed on a workstation. Results: Skull base defects were seen at CT in 18/19 patients. Average CT defect size was 10.1 mm (range 0-30 mm). Average endoscopic defect size

was 7.8 mm (range 0-20 mm). Endoscopic defect size was within 2 mm of radiologic defect size in only 42.1% of cases. In patients with 2 mm discrepancies or greater, CT measurements overestimated defect size by an average of 9.1 mm (range 3-20 mm). In 3/19 patients, radiologic defects were either not identified or were underestimated.

Conclusion: CT and endoscopic measurements of skull base defect size are often discrepant. Surgical implications for defect repair will be discussed.

4:14 pm

(Abstract ID # 896)

"Surgical Outcomes of Drillout Procedures for Management of Complicated Frontal Sinus Pathology"

Pete S. Batra, MD
Donald C. Lanza, MD
Cleveland, Ohio

Disclosure: No disclosures reported

Introduction: Standard endoscopic techniques allow for management of majority of frontal sinus pathology. However, the purely endoscopic approach has its limitations, especially in the setting of iatrogenic frontal sinus disease with new bone formation. The purpose of this report is two-fold: (1) to determine the incidence and (2) the efficacy of drillout procedures in the management of frontal sinus disease in a tertiary rhinology practice.

Methods: Retrospective data analysis was performed on all patients undergoing frontal sinus surgery, and more specifically drillout procedures, from May 1999 to April 2004. The incidence of drillout surgery was determined. Demographic data, symptomatology, type of drillout procedure, and primary pathology were determined. Outcome was assessed based on subjective symptomatology and objective endoscopic patency postoperatively. Results: A total of 186 patients underwent 207 frontal sinus procedures during this time period; twenty-five patients (13.4%) required a total of 30 (14.5%) drillout procedures. The patients had undergone an average of 3.2 procedures (range 0 – 9) prior to surgical intervention; four cases were primary and 26 cases were revision procedures. The breakdown of the procedures was as follows: Draf III – 17, trans-septal frontal sinusotomy – 6, Draf II – 5, and Draf IB – 2. The indications included mucocele (11 cases), frontal sinusitis (6 cases), tumors (5 cases), invasive fungal sinusitis (2 cases), and CSF leak (1 case). Postoperatively, headache symptoma-

tology resolved in 32%, improved in 56%, and remained unchanged in 12% of the patients. Endoscopic patency of the neo-ostium was noted in 23 cases (92%). Average follow-up was 16.3 months ranging from 3 to 46 months.

Conclusions: In this series, drillout procedures were successfully utilized in 25 patients and, thus, may serve as an important adjunct to the standard endoscopic techniques for management of complex frontal sinus disease. Since the procedure was only utilized 30 times over a 5-year period, it is reserved for specific circumstances in carefully selected patients.

4:21 pm

Discussion

4:30 pm

(Abstract ID # 925)

"Powered Turbinoplasty – The Long Term Results As Compared To Electrocautery And Submucosal Turbinoplasty"

Raymond Sacks, MD
Niell Boustred, MD
Hornsby, New South Wales
Australia

Disclosure: Study funded by Medtronic Xomed in terms of the provision of both Submucosal Turbinate Debrider blades as well as 3.5 mm tricut microdebrider blades

Introduction: Allergic rhinitis is a common condition effecting a large number of patients across Australia. Although most of these patients respond well to medical treatment, there remains a significant number who have ongoing nasal obstruction and require surgical intervention. Surgical intervention has ranged from complete turbinectomy through to cauterization of the turbinate mucosa and submucosal turbinate cauterization. The major problem with turbinate resection is the loss of the mucosa which has physiological functions in terms of maintenance and humidification of the nasal airflow system. Crusting is also a common post-operative problem in these patients. Cauterization to the turbinate mucosa has a very poor long term success and again causes mucosal damage. Submucosal turbinate cauterizations are short lived and require periodic repeating. A submucosal resection of the turbinate or a powered turbinoplasty would hopefully give a long term solution to the problem.

Method: Two separate randomized studies with 50 patients in each group were introduced into the study based on failed medical management of nasal obstruction secondary to turbinate congestion. All patients were randomized into either left or right turbinate to be treated with the Xomed submucosal turbinate debrider. The opposite turbinate was treated by submucosal cauterization in the first study and by powered turbinoplasty in the second study. The following parameters were measured at 1 week, 1 month, 4 months and 1 year. 1. Patient VAS scores for nasal obstruction, anterior and posterior rhinorrhoea. 2. Examiner (blinded) VAS scores for both anterior rhinoscopy and nasoendoscopy 3. Acoustic rhinometry 4. Complications – bleeding, crusting, pain/discomfort.

Results: Nasal obstruction: At 4 months overall improvement for all groups but at 1 year significant advantage of turbinoplasty over submucosal turbinate resection and in turn advantage over electrocautery Rhinorrhoea: No significant difference in all three groups. Anterior Rhinoscopy/Endoscopy: Overall deterioration in electrocautery but no significant difference between submucosal resection and turbinoplasty at 1 year. Rhinometry: Powered turbinoplasty significantly better than the other two groups at 1 month, 4 months and still at 1 year.

Conclusion: Powered turbinoplasty gives a consistent, reliable result which gives long term relief of obstructive symptoms without significant risk of complication and is cost effective, technically straight forward and highly predictable. The surgical technique of powered turbinoplasty and the results of the two studies will be presented.

4:37 pm

(Abstract ID # 920)

"Effect of Estrogen on Olfactory Neuron Proliferation"

Karen J Fong, MD
Rachel J Woo, BS
Portland, OR

Disclosure: Supported by an ARS New Investigator's Research Grant and the Medical Research Foundation of Oregon.

Introduction: The olfactory mucosa has the unique ability to regenerate neurons throughout life, making it an important system for the study of neuronal development, differentiation, and plasticity. The effects of estrogen on these processes have not been studied, although it is well-recognized in the brain that estrogen can affect the developmental processes of neurons at

multiple levels. The objective of this study is to determine whether estrogen affects the rate of proliferation of olfactory receptor neuron precursors.

Materials and Methods: Adult female ovariectomized Sprague-Dawley rats were divided into two groups. Group 1 ("estrogen-replacement") received 17beta-estradiol at a level of 20ug/kg-bw/day (n=6) and group 2 ("controls") received vehicle alone (n=6) via a subcutaneously implanted microsmotic pump for a period of 2 weeks. To label dividing cells, all animals were administered a single dose of 5-bromo-2'-deoxyuridine (BrdU; a thymidine analog) intravenously one hour prior to sacrifice. Tissues were then processed for frozen sections and immunohistochemistry was performed using an anti-BrdU monoclonal antibody. BrdU-labeled cells were counted from serial cross-sections through the nasal cavity. Raw counts were divided by the total length of olfactory epithelium counted to yield a labeling index. Statistical comparison of the labeling index between the groups was analyzed using a Student's t-test.

Results: Comparison between the two groups showed significantly higher numbers of BrdU-labeled cells in the estrogen-replacement group (6.2+/-0.8) vs. controls (4.1+/-0.8;$p<0.05$).

Conclusion: These preliminary results suggest that systemic estrogen levels may play a role in olfactory neuron proliferation. Supported by an ARS New Investigator's Research Grant.

4:44 pm

(Abstract ID # 921)

"Innate Antimicrobial Activity Of Sinus Secretions In Patients With/Without Chronic Rhinosinusitis"

Jivianne T Lee, MD
James N Palmer, MD
Alexander G Chiu, MD
David W Kennedy, MD
Philadelphia, PA

Disclosure: No disclosures reported

Introduction: Both nasal and bronchoalveolar secretions have been found to possess inherent antimicrobial properties that participate in the innate host defense of the respiratory tract. Such microbicidal capabilities are believed to be conferred by the presence of intrinsic antibacterial polypeptides, which are

produced by respiratory epithelia and secreted into the airway milieu. The purpose of this study was to determine if sinus secretions exhibited the same innate antimicrobial activity as their upper and lower airway counterparts, and if such bactericidal capabilities differed in patients with and without chronic rhinosinusitis.

Method: Maxillary sinus fluid was obtained from 12 subjects without a history of sinus disease via antral lavage. All patients denied having any previous history of sinus infection and showed no radiographic evidence of sinus pathology either on CT scan or MRI. Similar specimens were also procured from 8 subjects with a history of chronic rhinosinusitis. In the latter group, antral lavage was performed immediately prior to functional endoscopic sinus surgery. Following specimen collection, both radial diffusion assays (RDA) and colony forming unit (CFU) microassays were used to test the antimicrobial effects of the samples against various microbes in vitro. Zones of clearance (no bacterial growth) and CFU counts were measured for each assay respectively.

Results: All 12 specimens obtained from patients without a history of rhinosinusitis failed to demonstrate any antimicrobial properties, showing no zones of clearance (-30RDU) on radial diffusion assays. In contrast, 6/8 samples acquired from patients with a history of chronic rhinosinusitis exhibited microbicidal effects when incubated with various microbes in vitro.

Conclusions: Maxillary sinus fluid obtained from normal subjects do not appear to exhibit the same microbicidal effects as their upper and lower airway counterparts. However, when acquired from patients with a history of chronic rhinosinusitis, antimicrobial properties are evident. Thus, previous or active infection may be necessary to induce the production of antibacterial polypeptides responsible for such microbicidal capabilities.

4:51 pm

Discussion

5:00 pm

Business Meeting – Members Only

Saturday May 14, 2005

8:00 am – 8:15 am

Introduction, Poster and Awards Presentation

Todd Kingdom, MD
Allen Seiden, MD
Moderators:

Todd Loehrl, MD
Ronald Swain, Jr. MD
8:15 am

(Abstract ID # 897)

"Lobular Capillary Hemangioma Of The Nasal Cavity: A Retrospective Study On 40 Patients"

Roberto Puxeddu, MD
Marco Berlucchi, MD
Gian Peppino Ledda, MD
Piero Nicolai, MD
Cagliari, Italy

Disclosure: No disclosures reported.

Introduction: Lobular capillary hemangioma (LCH) or pyogenic granuloma is a benign lesion of unknown etiology that must be included in the differential diagnosis of vascular lesions of the nasal cavity. The present retrospective study, which is based on a large cohort of patients with LCH, has analyzed the clinical presentation, histological and radiological findings, as well as the treatment strategy of this uncommon disease.

Methods: The clinical records of 40 patients affected by LCH, who were treated in the period January 1993–December 2003 at two university hospitals, were reviewed. The study group consisted of 21 males and 19 females, with a mean age of 40 years (range: 10 mo–72 yr). Data concerning symptoms, possible etiologic factors, endoscopic findings, CT or MR (whenever available), and treatment were collected.

Results: Previous nasal trauma and pregnancy were identified as possible causative factors in 6 (15%) and 2 (5%) patients, respectively. The main presenting symptoms were unilateral epistaxis (95%) and nasal obstruction (35%). The lesions ranged in size from 1 to 8 cm and mainly involved the nasal septum (45%) and the nasal vestibule (17.5%). In the 8 (20%) patients with large lesions radiological evaluation was helpful not only in assessing the extent, but also in suggesting the possible diagnosis. All patients underwent endoscopic resection under local (72.5%) or general (27.5%) anesthesia. At present (mean follow-up: 53 months), no recurrence has been observed.

Conclusions: To the best of our knowledge, this is the largest series of patients with LCH of the sinonasal tract reported to date. Whenever the mass is considerable in size, differentiation from other vascular lesions (i.e., angiofibroma, angiosarcoma) may be difficult. In these circumstances, information obtained with imaging techniques (site of origin, pattern of growth and vascularization) may indeed suggest a correct diagnosis without resorting to biopsy. Endoscopic surgery is the treatment of choice even for large lesions, which do not require preoperative embolization.

8:22 am

(Abstract ID # 902)

"Subjective Headache Before And After Endoscopic Sinus Surgery"

William H Moretz III, MD
Stilianos E. Kountakis, MD
Augusta, GA

Disclosure: No disclosures reported.

Objectives: To demonstrate the effect of endoscopic sinus surgery on subjective headache scores in patients diagnosed with chronic rhinosinusitis (CRS) with or without nasal polyps.

Methods: Retrospective analysis of prospectively collected data from 201 patients over a three-year period. Headache and Sino-Nasal Outcomes Test (SNOT-20) mean scores were compared preoperatively and two years postoperatively on patients diagnosed with CRS with or without nasal polyps.

Results: Two hundred one patients underwent surgical management of CRS with or without nasal polyps over a 3 year period. One hundred four patients were male, 97 female, with a mean age of 49 (range 18-80) years. Polyps were present in 78 patients with CRS. The mean subjective headache score based on a 0-10 visual analog scale improved from 4.7 preoperatively to 0.8, two years postoperatively ($p<0.0001$). The mean headache score of 123 patients without polyps was larger

compared to 78 patients with polyps (5.1 vs. 4.1 respectively, $p<0.05$). As previously reported, the mean overall preoperative and postoperative SNOT-20 scores were 28.7 and 6.7, respectively ($p<0.0001$).

Conclusion: Headache is a common symptom with CRS, present in 70.1% of our patients undergoing FESS for CRS with or without nasal polyps. An overall decrease in mean headache scores was noted at two year follow-up.

8:29 am

(Abstract ID # 904)

"Progression of Sinus Disease in the Intubated Patient"

Spencer Payne, MD
Michael S. Benninger, MD
Detroit, MI

Disclosure: No disclosures reported.

Introduction: Sinus disease in the intubated patient remains a frequent reason behind otolaryngologic consultation to the Intensive Care Unit. Previous prospective studies have often been limited to only one CT scan of the sinuses. The purpose of this study was to verify the development of sinus disease in the orotracheally intubated patient and determine a radiographic pattern of its progression if present.

Methods: The charts of all patients admitted to the hospital with a diagnosis of aneurysm or subarachnoid hemorrhage over the past year were evaluated. Patients who were orotracheally intubated with at least one post-intubation computed tomography (CT) scan of the head were included. CT scans obtained after the initiation of antibiotics or tracheostomy were excluded. The Lund-Mackay system was used to evaluate the scans.

Results: A total of 36 patients with 130 scans were evaluated. Analysis revealed a significant trend toward increasing severity of sinus disease over the first seven days of intubation ($R2=.36$, $P<.05$). The presence of a nasogastric tube (NGT) resulted in a higher R2 value (0.49 vs. 0.28, $P<0.001$) but the trend remained significant for both groups.

Conclusions: This study shows that the presence and progression of sinus findings is fairly common in the intubated patient and that while the placement of an NGT increased the rate of development of sinus findings, the lack of one did not preclude sinus disease. Clinical exam remains a more important indicator of disease when evaluating the ICU patient for sinusitis.

8:36 am

Discussion

8:45 am

(Abstract #906)

"Cocaine-Induced Midline Destructive Lesions (CIMDL): Cocaine Concentration is More Significant Than Time of Exposure"

Matteo Trimarchi, MD
Anna Rita Miluzio, PhD
Pier Carlo Marchisio, MD
Mario Bussi, MD
Milano, Italy

Disclosures: No disclosures to report

Background: Estimates of the current number of regular cocaine users in the United States of America (at least once per month) vary, but 1.75 million is a widely accepted figure within the research community. Cocaine-induced lesions may cause extensive destruction of the osteocartilaginous structures of the nose, sinuses and palate but its pathogenesis is still unknown.

Study Design: This study was meant to evaluate the occurrence of increased apoptosis and aberrant mitosis induced by cocaine in vitro. We measured the effect of cocaine in vitro on human epithelial cells (HaCat cells) at different concentrations and times of exposure. Material and methods. HaCat cells were incubated with cocaine: treatment of 2.5 mM, 5 mM and 10 mM of drug for 1 and 6 hours of exposure was analysed for apoptotic cells detection by TUNEL assay; aberrant mitosis were investigated by immunofluorescence assay, using a monoclonal anti-tubuline antibody (20C6) after HaCat cells exposure to 10 mM and 100 mM of cocaine for 24, 48 hours.

Results: After 1 h of treatment apoptotic cells increased in a time dependent manner compared to the control group (p 0,01): 2.5 mM, 5 mM and 10 mM of cocaine induced 16%, 45% and 84% of apoptosis respectively. We found high density of aberrant mitoses compared to the control group (p 0,01).

Conclusion: Effect of drug concentration is more significant than time of exposure and this process may explain the severe midline destructive lesions in some patients using high doses of cocaine compulsively and continuously.

8:52 a.m.

(Abstract ID # 907)

"Comparison of Three Techniques for Transsphenoidal Pituitary Surgery"

Jeffrey Gardner Neal, MD
John D. Osguthorpe, MD
John S. Kulbersh, B.S.
Rodney J. Schlosser, MD
Charleston, SC

Disclosure: No disclosures reported

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.

8:59 a.m.

(Abstract ID # 910)

"Regional Analysis of Sinonasal Ciliary Beat Frequency in Normal Subjects"

Jeffrey M. Shaari, MD
James N. Palmer, MD
Alexander G. Chiu, MD
Noam A. Cohen, MD
Philadelphia, PA

Disclosure: No disclosures reported.

Introduction: Mucociliary clearance, a primary host defense mechanism, depends on mucus production and its clearance by the coordinated beating of cilia lining the airways. Numerous investigations have analyzed ciliary activity in brushings from the inferior turbinate. To date, only one study has investigated whether the inferior turbinate is representative of sinonasal ciliary activity. We analyzed ciliary beat frequency (CBF) from the inferior turbinate, uncinate process and sphenoethmoid recess in non-sinusitis patients to determine regional variability of ciliary activity within the sinonasal cavity.

Methods: Explants of sinonasal epithelium were analyzed at 37°C. Beating cilia were visualized with differential interference contrast microscopy. Images were captured using a high speed digital camera with a sampling rate of 250 frames per second. A one dimensional tracking algorithm analyzed individual pixel grayscale values within each frame of the video. The differences in grayscale were plotted as a time dependent waveform and frequency was calculated as the inverse of the peak-to-peak distance. A minimum of three areas of beating cilia were analyzed per regional sample. Statistical analysis was performed with repeated-measures ANOVA. Results Complete sampling of all three sites was accomplished in seven patients. Although a trend of accelerated CBF was noted in the inferior turbinate, this was not found to be statistically significant (p¡Ü0.05). The mean CBF for all sights in all patients was 12.1Hz ¡À 2.9Hz, in agreement with published values.

Conclusions: This study demonstrates no regional differences in CBF within the sinonasal cavity, supporting previous work and validating analysis of inferior turbinate cilia.

9:06 a.m

Discussion

Moderators:

Todd Kingdom, MD
Peter Doble, MD
9:15 am

(Abstract ID # 911)

"Long-term Zileuton Post-surgical Prophylaxis for Nasal Polyposis"

Larry Duberstein, MD
Memphis, TN

Disclosure: Advisor to Critical Therapuetics, Inc.

Introduction: Nasal polyp regrowth is common following polypectomy. It has been reported anecdotally that patients with nasal polyposis treated surgically and followed by zileuton, a 5 lipoxygenase (5-LO) inhibitor, exhibit normal liver function and have less polyp recurrence.

Methods: Thirty-one adult patients, 11 of whom failed initial montelukast treatment, underwent nasal polypectomy followed by preventive treatment with zileuton (600 mg QID, TID, and/or BID), second generation antihistamines, and topical glucocorticoids for 4 months to 5 years (4 months–1 year, n=7; 1-2 years, n=11; and 2-5 years, n=13). Typically, patients were prescribed zileuton 600 mg QID and were subsequently tapered to 600 mg BID. Patients were regularly monitored by serial otolaryngologic examination and routine serial liver function tests. Results: All patients, regardless of zileuton dose schedule, tolerated the regimen with no elevation in liver function tests over the upper limit of normal. Reported side effects were limited to rigors and chills in one patient. Most patients (26/31) experienced no recurrence of nasal polyps, including 2/5 of the montelukast failures. Of those patients that recurred, prescribed doses were then increased to 600 mg QID with no further polyp regrowth. Conclusions: These 31 cases are illustrative of the safety and tolerability of zileuton, a 5-LO inhibitor, when used in a prophylactic regimen following nasal polypectomy. Patients had no evidence of liver toxicity, and only one patient experienced side effects. The majority of patients had no documented polyp recurrence during the observation period.

9:22 am

(Abstract ID # 913)

"Overexpression Of Leukotriene C4 Synthase (LTC4S) And Plasminogen Activator Inhibitor 1 (PAI 1) Gene Promoter Polymorphisms In Sinusitis"

Alessandro de Alarcon, MD
John W Steinke, PhD
Joseph K Han, MD
Larry Borish, MD
Charlottesville, VA

Disclosure: No disclosures reported.

Introduction: Studies have described polymorphisms in genes involved with both leukotriene synthesis and remodeling. The LTC4S gene is involved in regulation of leukotrienes, a C-toA base exchange in the promoter region influences gene expression. The PAI-1 gene is associated with tissue fibrosis, 4G or 5G residues in the promoter region have been associated with altered transcription. The role of these polymorphisms was investigated in patients with sinusitis and polyps. Study Design: Prospective study of patients undergoing endoscopic sinus surgery at a university hospital between 1996 and 2004.

Materials & Methods: Demographic data and sinus tissue were collected on patients. Patients were classified into four groups: Controls, Chronic hyperplastic eosinophilic sinusitis (CHES), Aspirin exacerbated respiratory disease (AERD), and Chronic inflammatory sinusitis (CIS). DNA was analyzed for the LTC4S and the PAI-1 promoter polymorphisms using standard PCR techniques. Results: There were 136 patients with 72 females and 64 males (mean age = 42 years). Fifty-six people were in the control group, 14 in the CIS, 45 in the CHES, and 21 in the AERD. The LTC4S allelic frequencies were: Controls: A=0.19, C=0.81; CIS: A=0.27, C=0.73; CHES: A=0.30, C=0.70; AERD: A=0.31, C=0.69. The A allele was more frequent in CHES vs. Controls (p=0.06). The PAI-1 Allele frequencies were: Controls: 5G=0.59, 4G=0.41; CIS: 5G=0.46, 4G=0.54; CHES: 5G=0.55, 4G=0.45; AERD: 5G=0.55, 4G=0.45. For the PAI-1 gene, the genetic variance between the four groups was not statistically different (p>0.05).

Conclusions: There appears to be a genetic component that contributes to nasal polyp formation in sinusitis.

9:29 am

(Abstract ID # 915)

"In Vivo Optical Coherence Tomography Of The Nasal Mucosa"

Usama Mahmood
James M Ridgway, MD
Zhongping Chen, MD
Brian J Wong, MD
Irvine, CA

Disclosure: No disclosures reported

Introduction: Optical coherence tomography (OCT) is an emerging imaging modality which uses light to produce in vivo high resolution cross-sectional images (10-microns) of tissues to depths of up to 3 mm. OCT is analogous to ultrasound, but relies upon interferometry and low-coherence optical sources to produce images of tissue structure at the histologic level. In this study, OCT was used to image the mucosa overlying the nasal septum and turbinates in order to obtain information regarding normative in vivo tissue micro-structure.

Methods: An OCT system employing a Michaelson interferometer and a 1.3-micron broadband light source was incorporated into a fiber-optic imaging device that was inserted into the nasal cavity. Cross-sectional tomographic images of the anterior and posterior nasal septum, turbinates, and vestibule were acquired in 30 patients in either the office or O.R. during surgical endoscopy.

Results: OCT images of the nasal mucosa identified the distinct boundaries between the epithelium, lamina propria, and underlying bone/cartilaginous tissue. Within the lamina propria, features consistent with glands, ducts, and blood vessels were clearly identified. The thickness of the epithelium and lamina propria was tabulated, as well. In patients who underwent decongestant therapy, before and after images showed distinct morphologic changes in the mucosa.

Conclusion: This study demonstrates the potential of using OCT to produce high-resolution images of the nasal mucosa. As an in vivo tissue micro-structural imaging modality, OCT may be valuable in studying the impact of allergic and infectious disease on the nasal mucosa, and monitor its response to pharmacologic therapy.

9:36 am

Discussion

9:45 am

(Abstract ID # 914)

"The Incidence Of Concurrent Osteitis In Patients With Chronic Rhinosinusitis: A Clinicopathologic Study"

Jivianne T Lee, MD
James N Palmer, MD
Alexander G Chiu, MD
David W Kennedy, MD
Philadelphia, PA

Disclosure: No disclosures reported.

Introduction: The pathogenesis of chronic rhinosinusits (CRS) has been found to be multifactorial, with environmental, general host, and local anatomic factors all contributing to its development. Recent animal studies have demonstrated that local osteitis of the underlying bone may also play a critical role in the elaboration of CRS by inducing persistent inflammatory changes in the surrounding mucosa. The purpose of this study was to determine the incidence rate of osteitis in patients with CRS undergoing functional endoscopic sinus surgery (FESS).

Methods: From January to July 2003, a prospective study was performed on 121 patients undergoing FESS for CRS. Age, number of previous surgeries, Lund McKay scores, radiographic bony characteristics, and pathologic findings were all documented. The presence of concurrent osteitis was assessed using both radiographic (neosteogenesis) and pathologic (bony inflammation) criteria. Results: The mean age of the patients was 44.3 years. 58% of the cases were revision surgeries, with each patient having an average of 2.2 operative procedures in the past. Computed tomography (CT) demonstrated neosteogenesis in 36% of patients, while 53% showed pathologic evidence of osteitis upon histological analysis of surgical specimens. Conclusions: Concurrent osteitis can be found in 36-53% of patients with CRS, using both radiographic and pathologic criteria respectively. This clinical finding correlates well with previous evidence of bone involvement in CRS found in animal models, further reaffirming the role of underlying osteitis in the pathogenesis of CRS.

9:52 am

(Abstract ID # 916)

"Chronic Rhinosinusitis with Nasal Polyps: Further Evaluation of the Superantigen Hypothesis"

Robert C. Kern, MD
David B. Conley, MD
Kristin A. Seiberling, MD
Robert P Schleimer, PhD
Chicago, IL

Disclosure: No disclosures reported.

Introduction: The hallmark of chronic rhinosinusitis and nasal polyposis (CRS/NP) is tissue infiltration with lymphocytes and eosinophils. Although the cause(s) of this inflammation remains unknown, attention has centered on 2 etiologic agents: Alternaria and Staphylococcus aureus. Current evidence suggests that both organisms may be capable of triggering a TH1/TH2 response with local recruitment and activation of eosinophils. A molecular mechanism whereby Alternaria elicits these effects has not yet been proposed, but Staphylococcus often secretes toxins with known superantigen capabilities. Superantigens (SAG) are believed to trigger the eosinophilic and lymphocytic tissue infiltration in related disorders such as asthma and atopic dermatitis, with evidence supporting a role for SAG in about 50% of CRS/NP patients. The current study will attempt to distinguish between CRS/NP patients with and without tissue evidence of SAG exposure.

Methods: Analysis of 19 CRS/NP patients undergoing ESS. 9/19 showed strong evidence and 10/19 showed minimal evidence of exposure to SAG based on TCR Vâ expression patterns determined by flow cytometry. We are presently analyzing the two groups using immunohistochemistry for expression of CD3, CD20, IL5, MBP, EG2, CD38, routine histology and clinical features. RESULTS: Preliminary results indicate no difference between the 2 groups in terms of Lund-McKay scores, tissue eosinophilia or CD3+ cells/hpf. A trend was noted for increased CD20+ cells/hpf.

Conclusions: The current results suggest that Vâ skewing is not associated with distinct mucosal pathology with the possible exception of CD20 positive B cells. Results will be interpreted in light of current theories of CRS/NP.

9:59 am

(Abstract ID # 918)

"Medical and Surgical Considerations in Patients with Samter's Triad"

Kevin Christopher McMains, MD
Larry Borish, MD
Stilianos E. Kountakis, MD
Augusta, GA

Disclosure: No disclosures reported

Objective: To report on objective and subjective outcomes of patients with Samter's triad treated with functional endoscopic sinus surgery (FESS), and correlate these results with aspirin desensitization in these patients.

Methods: Retrospective analysis of prospectively collected data in 15 patients requiring revision FESS after failing maximum medical therapy and prior sinus surgery for chronic rhinosinusitis in the context of Samter's triad. Five patients underwent aspirin desensitization (DS) while 10 did not (NDS). These patients represent a subset of patients previously reported who were treated in a tertiary Rhinology setting over a 3 year period (1999-2001). CT scans were graded according to the Lund-Mackay grading scale and symptom scores were assessed using the SNOT-20 outcomes instrument. Endoscopy was scored according to the RhinoSinusitis Task Force methodology. All patients had a minimum 2 year follow-up. Results: Preoperative CT scores were 20.1+/-1.9 for NDS patients and 20.4+/-2.0 for DS patients (p=NS). Pre-op and post-op SNOT-20 scores for NDS patients were 31.8+/-3.9 and 8.8+/-1.7 respectively as compared to 32.0+/-3.6 and 7.3+/-1.7 for DS patients (p=NS). Pre-op and post-op endoscopy scores for NDS patients were 7.6+/-1.2 an 2.0 +/-0.4 respectively as compared to 7.6+/-1.3 and 1.1+/-0.4 for DS patients (p=NS). Of DS patients, none required additional surgery while 8 of 10 NDS patients required additional revision during the follow-up period (p=0.003).

Conclusion: Revision FESS benefits patients with Samter's triad; however, the addition of aspirin desensitization decreases the likelihood that patients with Samter's will require additional surgical intervention over a two-year period.

10:06 am

Discussion

10:15 am – 10:35 am

Break

Moderator:

Stilianos Kountakis, MD

10:35 am

(Abstract ID # 924)

"Endoscopic Management Of The Frontal Sinus Outflow Tract For Fractures Of The Frontal Sinus: A New Alternative To Obliteration"

Jacob Steiger, MD
Jivianne T Lee, MD
James N Palmer, MD
Alexander G Chiu, MD
Philadelphia, PA

Disclosure: No disclosures reported.

Introduction: Frontal sinus fractures associated with potential obstruction of the frontal sinus outflow tract have traditionally been treated with open reduction and concomitant frontal sinus obliteration. Such an approach was adopted because previous surgical attempts at restoration of frontal sinus ventilation often failed due to subsequent scarring and stenosis of the nasofrontal drainage path, leading to frontal sinus disease and potentially fatal long term sequelae. However, the advent of more advanced endoscopic techniques has enabled more meticulous dissection of the frontal recess to be performed, resulting in greater success rates with respect to both the establishment and maintenance of frontal sinus outflow tract patency. The purpose of this study was to determine if transnasal endoscopic frontal sinusotomy was an effective approach in the management of the frontal sinus outflow tract following fractures of the frontal sinus and represented a viable alternative to obliteration

Methods: A prospective study was performed on four patients who presented with frontal sinus fractures from December 2003 to August 2004. All underwent endoscopic frontal sinusotomy with either open or endoscopically assisted reduction and fixation. Frontal sinus outflow tract patency was determined by direct endoscopic visualization after 6 months to 1 year of follow-up.

Results: Three of the 4 patients presented with isolated anterior table frontal sinus fractures. Two of the 3 were successfully reduced via a transnasal endoscopic approach without an external incision, while the third was repaired through a frontal sinus trephination under endoscopic visualization. The fourth patient possessed both an anterior table fracture and posterior table dehiscence, which was reduced through a preexisting facial laceration. All four patients underwent endoscopic frontal recess dissection to open the frontal sinus outflow tract in the same setting. After a follow-up of up to 1 year, all 4 patients were found to have patent frontal sinus drainage pathways without any adverse sequelae.

Conclusions: Frontal sinus fractures with concurrent obstruction of the frontal sinus outflow tract may no longer necessitate frontal sinus obliteration. Simultaneous transnasal endoscopic frontal recess dissection during the time of fracture repair has been found to successfully open and maintain the frontal sinus drainage pathway. Longer follow-up is necessary to determine if such patency can be sustained in the future.

10:42 am

(Abstract #877)

"Invasive Fungal Sinusitis: What is the Appropriate Follow-up?"

John DelGaudio, MD
Kristen Otto, MD
Atlanta, GA

Disclosure: No disclosures reported.

Introduction: Early detection and aggressive surgical and medical management have been associated with higher overall survival rates among patients with invasive fungal sinusitis (IFS). With improved survival comes the question of how to appropriately manage these patients once disease stability has been achieved. Previous reports suggest follow-up only as long as the patients remain immunocompromised. This study attempts to answer the question of long-term clinical follow-up, and define a regimen suitable for ensuring minimal post-treatment complications.

Methods: A retrospective review included all patients diagnosed with IFS between 1988 and 2004. The study group included patients who survived the initial treatment course, with at least 30 days of post-treatment follow-up of their IFS. Patient records were reviewed for significant complications, evidence of chronic sinus disease, the clinical status of their underlying medical comorbidities, and frequency and mode of follow-up.

Results: Thirteen patients were included. The average follow-up time was 611 days. Significant complications included one patient with acute bacterial sinusitis with resultant visual loss, one patient with chronic osteomyelitis, and two patients who died of recurrent IFS. Chronic crusting and bone sequestration was a major problem in three patients. Six of thirteen patients had persistent chronic rhinosinusitis. All complications were noted to occur after initial disease eradication was thought to have taken place.

Conclusions: Significant complications of IFS can occur after medical remission and recovery of immune competence. Patients with invasive fungal sinusitis should be followed long-term, with endoscopy and aggressive debridement, until remucosalization of the sinuses, resolution of crusting, and cessation of bony sequestration have occurred.

10:49 am

Discussion

10:55 am – 11:25 am

Panel
Controversies in Frontal Sinus Surgery

Moderator:

Frederick Kuhn, MD

Panelists:

Martin Citradi, MD
Boris Karanfilov, MD

11:25 am – 11:55 am

Patient Advocacy Committee Panel

"Correct Coding for Better Reimbursement in Rhinology"

Moderator:

Michael Setzen, MD

Panelists:

Joseph B. Jacobs, MD –
"How to Code Appropriately in the Office"

Michael Sillers, MD –
"FESS/Turbinate Surgery/Septoplasty-How I Code"

Michael Setzen, MD –
"Image Guidance/Post Op Debridement-Documentation, Guidelines and Coding"

11:55 am

Closing Remarks

Joseph B. Jacobs, MD
Michael Sillers, MD

The following presentations were withdrawn from the program:

Abstract ID #879

"Skull Base And Orbital Erosion In Allergic Fungal Sinusitis (AFS) And Non-AFS Sinusitis"

WITHDRAWN

Mark Ghegan, MD
Rodney Schlosser, MD
Charleston, South Carolina

Abstract ID #875

"Surfactant-Associated Proteins In Human Sinus Mucosa"

Bradford Woodworth, MD
Jeffrey Neal, MD
Rodney Schlosser, MD
Baatz John, MD
Charleston, SC

Abstract #898

"Improvement Of Health Outcomes
Using Clarithromycin In The
Management Of Acute Rhinosinusitis"

James A Hadley, MD
Ameet Singh, MD
Rochester, NY

POSTER PRESENTATIONS
COSM 2005

Poster/Abstract ID # 917

"Endoscopic Medial Maxillectomy for Sinonasal Neoplasms and Chronic Maxillary Sinusitis"

Bradford A. Woodworth, MD
Ryan O. Parker, BS
Rodney J. Schlosser, MD
Charleston, SC

To be presented by Dr. Rodney Schlosser and/or Dr. Jeff Neal in Dr. Woodworth's absence.

Disclosure: Rodney J. Schlosser MD - BrainLab consultant Aventis consultant

Introduction: Endoscopic medial maxillectomy (EMM) has been recently described as an alternative technique to open maxillectomy for benign sinonasal neoplasms. Few reports, however, discuss the efficacy of EMM for treatment of inflammatory disease of the maxillary sinus. We evaluate the efficacy of EMM in treating both sinonasal neoplasms and inflammatory disease.

Methods: A retrospective review of patients who underwent EMM between December 2002 and September 2004 was performed. All patients were treated with EMM alone or as part of an endoscopic sinus surgery procedure. Standard demographic data, operative technique, and postoperative follow up times were collected. Results: Twenty-eight patients (average age 57 years) underwent 33 EMMs for inverted papillomas (n=6), hemangiopericytoma (n=1), ameloblastoma (n=1), squamous cell carcinoma (n=1) or chronic maxillary sinusitis refractory to maxillary antrostomy (n=24). All patients with inflammatory disease failed prior sinus surgery, including 9 Caldwell-Luc procedures. Average follow-up for neoplasms was 14 months (range, 7-23 months) with no recurrences and for inflammatory disease was 14.5 months (range, 4-22 months). One patient with maxillary sinusitis recurred and was managed medically. Our only complication was one nasolacrimal duct injury.

Conclusion: Endoscopic medial maxillectomy is both a safe and effective treatment for appropriate maxillary neoplasms and for chronic maxillary sinusitis refractory to standard medical and endoscopic surgical management.

Poster/Abstract ID # 889

"Nasal Septal Suture Technique Versus Nasal Packing After Septoplasty"

Altan Yildirim, MD
Sivas, Turkey

Disclosure: No disclosures reported

Background: To determine the effects of nasal septal suture technique versus nasal packing on eustachian tube function and arterial blood gas changes.

Methods: Eighty patients whom have been performed septoplasty were studied. Patients with no middle ear disease and have A type tympanograms between ± 50 mmH2O were included. Mucoperichondrial flaps of nasal septum were sutured with 5/0 Vicril in forty of them. Nasal packing was performed for 48 hours in the other forty patients. Acoustic tympanometry and PH, PCO2, O2 analysis of arterial blood were performed preoperatively and 48 hours postoperatively. Preoperative results of the parameters of nasal septal suture group and nasal packing group were statistically compared with independent sample t test. Preoperative and postoperative results of the parameters of each group were also statistically compared with paired sample t test.

Results: There were no statistically difference between nasal septal suture group and nasal packing group for the preoperative results of acoustic tympanometry and PH, PCO2, O2 analysis of arterial blood. Although mean values of postoperative acoustic tympanometry and PCO2, O2 analysis of arterial blood were clinically worse than preoperative values for both groups, the differences between preoperative and postoperative results for nasal suture group were not statistically significant, but the differences between preoperative and postoperative results for nasal packing group were statistically significant.

Conclusion: The effects of nasal septal suture for eustachian function and arterial blood gas changes are better than nasal packing.

Poster/Abstract ID # 900

"Comparison of Laser vs. Surface Touch Registration for Image-Guided Sinus Surgery"

Bradford A. Woodworth, MD
Gavin W. Davis, BA
Rodney J. Schlosser, MD
Charleston, SC

To be presented by Dr. Rodney Schlosser and/or Dr. Jeff Neal in Dr. Woodworth's absence.

Disclosure: Rodney Schlosser MD - BrainLab Consultant Aventis Consultant

Introduction: Use of image guidance systems has become more popular in endoscopic sinus surgery. The laser registration technique has been previously used, however, a less expensive surface touch registration technique has recently been developed. We compared the accuracy and duration of laser and surface touch registration techniques.

Materials/Methods: Localization accuracy after laser and surface touch registration was examined following 15 endoscopic sinonasal procedures between July and September 2004. Compared anatomic locations included the nasofrontal angle, nasolabial angle, posterior maxillary walls, skull base, and posterior vomer. For each localization point the degree of error (in millimeters) was measured in superior-inferior (SI), anterior-posterior (AP), and right-left (RL) dimensions by an independent observer blinded to registration technique. The duration of each registration was recorded for both techniques. Results: Laser registration was significantly faster (mean 20 seconds) than surface touch registration (mean 20 vs. 63 seconds, respectively, $p<0.05$). Laser registration was accurate within 0.3 mm in the SI direction, 0.4 mm in the AP direction, and 0.4 mm in the RL direction. Surface touch registration was accurate within 0.3 mm in the SI direction, 0.4 mm in the AP direction, and 0.3 mm in the RL direction. There was no significant difference between techniques for any anatomic point. In 97.7% of all points, accuracy was within 2 mm or less for both the laser and surface touch registration.

Conclusion: Surface touch registration is significantly slower than laser registration, but has virtually no difference in accuracy. Both techniques compare very favorably to the accuracy of other systems reported in the literature.

Poster/Abstract ID # 885

"Imaging Of The Internal Carotid Artery And Adjacent Skull Base With Three-Dimensional CT Angiography For Preoperative Planning And Intraoperative Surgical Navigation"

Jern-Lin Leong, MD
Pete S Batra, MD
Martin J Citardi, MD
Cleveland, OH

Disclosure: Disclosure MJC GE Healthcare Navigation. consultant, 2003-present CBYON, consultant, 1999-2003

Introduction: Three-dimensional computed tomographic angiography (3DCTA) demonstrates the spatial relationships of the internal carotid artery (ICA) and adjacent skull base. This imaging modality may be incorporated into intraoperative surgical navigation during endoscopic approaches to the skull base.

Methods: The charts of all patients who had undergone 3DCTA imaging between July, 2002 and June, 2004 were reviewed. For 3DCTA, 1 mm axial CT scan images were obtained with simultaneous intravenous contrast bolus on a multi-detector CT scanner (VolumeZoom, Siemens, Munich, Germany). Coronal and sagittal images were reconstructed using the CBYON Suite version 2.6-2.8 (CBYON, Mountain View, CA). The CBYON Suite was also used for creating CTA images through its volume-rendering protocols. Both standard axial, coronal and sagittal images as well as 3DCTA images were used for diagnostic evaluation, preoperative planning and surgical navigation.

Results: A total of 20 patients had 20 3DCTA studies performed for diagnostic evaluation and/or preoperative planning and in 16 instances, the 3DCTA images were used during intraoperative surgical navigation. The diagnoses included neoplasm (7 malignant and 3 benign), fibro-osseous lesions (2), fungal sphenoiditis (2), CSF leak (2), mucocele (1) and other (3). Computer-enabled CT image review was performed in all cases. Images generated by 3DCTA facilitated the definition of the anatomic relationships between the ICA and skull base lesion. During intraoperative surgical navigation, the 3DCTA provided critical information about the ICA location and adjacent skull base anatomy in the operative field.

Conclusions: 3DCTA is a useful means for assessing the ICA and its relationship to skull base lesions. Incorporation of 3DCTA into intraoperative surgical navigation facilitates the comprehension of operative field anatomy in the ICA region. As a result, this imaging technique, especially when combined with intraoperative surgical navigation, may enhance surgical outcomes. Furthermore, this strategy extends the applications of minimally invasive endoscopic approaches to the skull base.

Poster/Abstract ID # 893

"Sildenafil (Viagra) And Nasal Congestion: Results Of A Randomized Placebo-Controlled Study"

Matteo Trimarchi, MD
Andrea Salonia, MD
Francesco Montorsi, MD
Mario Bussi, MD
Milano, Italy

Disclosure: No disclosure reported

Background: Nasal congestion may be a side effect after subministration of Viagra. The aim of this study was to evaluate the impact of VIAGRA over nasal airway parameters in young potent men.

Methods: Eleven men (age: 26+/-1.8) with normal BMI (25.7+/-0.5) and without nasal respiratory disorders were enrolled in this study. All men underwent an evaluation of systolic (SBP) and diastolic blood pressure (DBP), heart rate (HR), SpO2%, acustic rhinometry and nasal endoscopy before and after placebo or VIAGRA (50 mg) plus visual sexual stimulation (vss). Nasal examination was performed using 0° rigid telescopes, 4 mm in diameter and digital images of each patient were archived. Statistical analysis was based on the Student's T test for a direct comparison and the Kruskal-Wallis test (K-W) for multiple comparison.

Results: A direct comparison analysis showed that, after drug administration + vss, MCA2 was significantly lower either after placebo (p=0.03) or VIAGRA (p=0.003). However, the K-W analysis of the post-stimulation values did not demonstrate any significant difference among these compounds (p=0.48; DF=2). On the contrary, VOL2 was significantly lower after VIAGRA + vss (p=0.01) but not after placebo + vss (p=0.18). All the other parameters did not show any significant fluctuations. Rhinoscopy showed a peculiar increasing of the volume of the inferior turbinates, with a subjective difference between placebo and VIAGRA.

Conclusions: These preliminary results show that VIAGRA reduces the nasal volume and that a sexual stimulation might decrease by itself the nasal airflow.

Poster/Abstract ID # 903

"Suture Medialization of the Middle Turbinate"

Kim Hewitt, MD
Richard R. Orlandi, MD
Salt Lake City, UT

Disclosure: No disclosures reported

Introduction: Adhesion of the middle turbinate to the lateral nasal wall is a common complication following endoscopic sinus surgery (ESS). The potential outcome of middle turbinate lateralization is obstruction of the maxillary, ethmoid, and frontal sinuses, resulting in recurrent sinus disease and often necessitating revision surgery. Various absorbable materials and inert stents have been developed to prevent middle turbinate adhesion to the lateral nasal wall. Suture medialization of the middle turbinate to the nasal septum with an absorbable suture has the potential to prevent lateralization as well. We report our experience with this technique.

Methods: A retrospective chart review of patients undergoing ESS was performed to evaluate the occurrence of middle turbinate scarring to the lateral nasal wall following suture medialization. Patients were excluded if they had previously undergone removal of the middle turbinate of if they were undergoing middle turbinate resection as a part of their current procedure (e.g., cerebrospinal fluid leak repair, skull base tumor resection, etc.).

Results: Eighty-four patient charts met inclusion criteria. 155 sides middle turbinates were suture medialized. Seventeen (11.0%) middle turbinates developed adhesions in 15 patients. Thirteen of the 17 adhesions were easily divided in the clinic during routine postoperative endoscopic care. 138 (89.0%) middle turbinates were free of scarring.

Conclusion: The development of adhesions following suture medialization of the middle turbinate is uncommon. Suture medialization should be considered as an alternative to middle meatal packing to prevent middle turbinate adhesions following ESS.

Poster/Abstract ID # 894

"Use of Anteriorly-Based Pericranial Flap in Frontal Sinus Obliteration"

Ali Moshaver, MD
Jeffery R Harris, MD
Hadi Seikaly, MD
Edmonton, AB Canada

Disclosure: No disclosures reported

Objective: In an era of endoscopic sinus surgery, frontal sinus obliteration continues to remain an important treatment option in chronic frontal sinus disease. Numerous avascular obliterative materials including fat, muscle, cancellous bone, and hydroxyapatite have been used in this procedure. In this paper, we describe a vascularized anteriorly-based pericranial flap to obliterate frontal sinus. Study design: Retrospective chart review of patients referred to tertiary care hospital between 1996-2003.

Methods: Records of the patients who underwent this procedure were reviewed. Demographics, indications, immediate and late complications were recorded. Phone questionnaire was used to assess patient satisfaction with the outcome.

Results: A total of 12 patients underwent frontal sinus obliteration using this technique. Mean follow-up was 40 months. None of the patients developed recurrent frontal sinusitis. All of the patients were pleased with the outcome.

Conclusion: Pericranial flap is a highly vascularized flap that is easily harvested and is an effective and viable modality for obliterating frontal sinus.

Poster/Abstract ID # 905

"Early Orbital Involvement in Invasive Fungal Sinusitis"

Benjamin Collin Stong, MD
John Michael DelGaudio, MD
Atlanta, GA

Disclosure: No disclosures reported

Background: Invasive fungal sinusitis is a rare condition occurring in immunocompromised patients. It represents a diagnostically and therapeutically challenging disease with high associated morbidity. Classically, orbital involvement is a hallmark of advanced disease and follows involvement of the paranasal sinuses and nasal soft tissues.

Objective/Hypothesis: We identified 5 patients with a primary orbital presentation of invasive fungal sinusitis that had minimal to no sinus symptoms.

Methods: A retrospective review of all patients diagnosed with invasive fungal sinusitis at a single tertiary care institution between 1987 and 2004.

Results: Sixteen patients (34%) out of 49, who met inclusion criteria, had orbital involvement during their disease course. Five of those patients (10%) presented primarily with orbital symptoms early in the course of their disease. Symptoms included proptosis, chemosis, and/or vision loss or changes with minimal or no symptoms related to their sinonasal soft tissues. Three of the patients had aspergillus on pathology, one had mucormycosis, and one pathology result was unknown.

Conclusions: Invasive fungal sinusitis requires aggressive, early intervention, necessitating early diagnosis. This series demonstrates that patients with invasive fungal sinusitis can present primarily with orbital involvement with minimal sinus findings early in the course of their disease. Invasive fungal sinusitis should be included in the differential diagnosis of patients presenting primarily with orbital signs and symptoms, especially in immunocompromised patients.

Poster/Abstract ID # 926

"Retrospective Review of Endonasal Dacrocystorhinostomy with Mucosal Flap Procedure (Wormald Procedure)"

Raymond Sacks, MD
Martin Forer, MD
Niell Boustred, MD
Hornsby, New South Wales Australia

Disclosure: No Disclosures reported

Introduction: The intranasal approach for dacrocystorhinostomy (DCR) is more than 100 years old with Caldwell describing the approach in 1893. There have been many different techniques tried with varying success rate. The external DCR is still favored by most ophthalmologists as the most effective procedure to alleviate nasal lacrimal duct obstruction. The reported success rates have varied from 80-95%. The endonasal approach with laser has a varied success rate from 60-86% and other investigators using mechanical means have reported a slightly higher success rate. Tsirbas and Wormald reported a 91% success rate in 44 DCRs using the mucosal flap procedure. This study aimed at assessing both the success rate and the patient satisfaction scores of endonasal and external DCR.

Methods: 121 patient records were reviewed. Data included pre and post-operative Jones I and II tests, valsalva bubble testing and endoscopic fluorescein test results. Telephone interviews were held with 117 of the 121 patients to assess the patient satisfaction score. Factors taken into account included length of hospitalization, post-operative pain and bleeding, time back to work and cosmetic implications. A comparison was then made with a group of 20 patients who had been subjected to external approach surgery. Results: Endonasal DCR gave a 97% success rate which is comparable to any study of external DCR. Patient satisfaction scores were significantly higher with endonasal DCR.

Conclusion: Endonasal DCR with mucosal flap procedure is a highly predictable, repeatable and technically simple procedure to master and to teach. The absence of an external facial scar is also more of an issue to patients than we have previously been led to believe. The surgical technique and results will be presented.

Poster/Abstract ID # 899

"Singulair Use in Patients with Sinusitis, Nasal Polyps and Allergy"

Siobhan Kuhar, MD
Steven Parnes, MD
Gavin Setzen, MD
Albany, NY

Disclosure: A portion of this study was funded through a grant to Dr. Parnes by Merck Pharmaceuticals

Introduction: Singulair is a leukotriene inhibitor used to treat inflammatory upper airway disease. Our experience with Singulair has included treatment of patients with chronic sinusitis, nasal polyposis and allergy.

Methods: A questionnaire evaluating the benefits of Singulair on sinus symptoms was mailed to 120 patients, 63 responses were obtained, 48 patients were taking Singulair (13 patients received immunotherapy alone and 2 patients were taking Accolate). Patient symptoms were evaluated on a five-point scale and the data were collapsed into three categories (improved, not improved, or worse). Patients with nasal polyposis and chronic sinusitis, not taking Singulair, were randomized after polypectomy to Singulair or Placebo in a double-blind study and evaluated for one year. Twenty-one patients were enrolled, eleven patients completed the 12 month study.

Results: In the questionnaire, 72.2% of patients reported moderate to severe nasal and sinus symptoms and >40% of patients were taking Singulair for over one year. Sinus symptoms of nasal obstruction/stuffiness, post-nasal drip, facial pressure/pain, headache and cough were significantly improved ($p<0.001$-0.05). Most patients with asthma had improvement in their asthma (80%) primarily a decrease in number of attacks (68.8%). Patients randomized to Singulair after FESS with polypectomy demonstrated a trend of improved sinus symptoms and decreased polyp regrowth as compared to the Placebo control group.

Conclusions: In our practices, Singulair is a well tolerated medication that provides measureable sinus symptom relief in patients with sinusitis, polyposis and allergy.

Poster/Abstract ID # 868

"Deposition Of Aerosolized Particles In The Maxillary Sinuses Before And After Endoscopic Sinus Surgery"

Michele Bauchet St Martin, MD
Cory James Hitzman, BChE
Timothy Scott Wiedmann, PhD
Franklin L Rimell, MD
Minneapolis, MN

Disclosure: No disclosures reported

Introduction: Topical drug delivery is currently under investigation for a number of diseases of the nose and paranasal sinuses. Such therapy is theoretically appealing because it targets medication directly to its site of action, thereby allowing for higher concentration in the paranasal sinuses as well as avoiding systemic side effects. Furthermore, recent studies have supported the assertion that topical therapy is beneficial in a variety of conditions that underlie chronic sinusitis. Current literature has documented a very low particle deposition efficiency of aerosolized particles into the paranasal sinuses. Mathematical modelling of particle deposition suggests that three factors influence the deposition efficiency: particle size, pressure gradient between the nasal cavity and sinus, and size of the sinus ostium. Of these, ostium size is the most dominant factor. We therefore sought to determine if maxillary antrostomy and ethmoidectomy would increase the delivery of aerosolized particles into the maxillary sinuses.

Methods: Five cadaver specimens underwent pre- and post-operative scintigraphy following administration of aerosolized Tc-99M aqueous solution via the nasal cavity. Five minute static images were then obtained with a gamma camera and regions of interest (ROI) were drawn around the maxillary sinuses. Counts per minute in the pre- and postoperative ROIs were then compared using the paired t-test.

Results: Results indicated a significant increase in deposition of radioactivity in the maxillary sinuses in the postoperative state ($p<0.01$).

Conclusions: Topical therapy for chronic sinusitis may be more feasible in the postoperative population and warrants further clinical investigation.

Poster/Abstract ID # 878

"Endoscopic Resection Of Sinonasal Hemangiomas And Hemangiopericytomas"

Rodney J Schlosser, MD
Terry Day, MD
Charleston, SC

WITHDRAWN

Disclosure: Brainlab AG Consultant

Introduction: Endoscopic resection of benign sinonasal neoplasms, such as inverted papilloma, has been well described. There are limited case reports of endoscopic resection of benign vascular tumors, such as hemangiomas, angiofibromas, or low grade malignant vascular neoplasms, such as hemangiopericytomas.

Methods: Retrospective review of sinonasal hemangiomas and hemangiopericytomas resected endoscopically at our institution.

Results: A total of five cases were identified which included 3 males and 2 females with an average age of 43.8 years. Three hemangiomas and two hemangiopericytomas were resected endoscopically with no recurrences at a mean follow-up of 13.6 months (range 2-30 months). Three tumors involved the skull base, two of these underwent pre-operative embolization. The only complication was a CSF leak that occurred in one patient as tumor was removed from the cribriform plate, and this was repaired at the same procedure immediately after tumor resection. Average tumor size was 5.9 cm x 3.1 cm with all tumors at least 2.5 cm in greatest dimension (largest tumor was 12 cm in greatest dimension).

Conclusion: Large vascular neoplasms of the sinonasal cavity, such as hemangiomas and hemangiopericytomas, can be safely removed using endoscopic techniques. Pre-operative embolization may be useful in larger tumors with skull base involvement. Regardless of resection technique, patients must have long-term endoscopic follow-up in order to detect recurrences.

Poster/Abstract ID # 867

"The Bacteriology of Sinus Infections Persisting After Endoscopic Sinus Surgery"

Miguel Neil Carlos Bravo, MD
Ian J. Witterick, MD
Tony Mazzulli, MD
Sigmund Krajden, MD
Cincinnati, OH

Disclosure: No disclosures reported

Objective: To determine the bacteriology in sinus infections that persist after adequately performed endoscopic sinus surgery Design: cross-sectional Setting: Mount Sinai Hospital, Toronto, ON St Joseph Health Center, Toronto, ON

Abstract: Sinus infections that fail to resolve despite achieving adequate ventilation and mucociliary clearance through endoscopic sinus surgery were compared to the typical bacteriology found in uncomplicated chronic sinusitis. The authors were careful in excluding cases that simply required revision surgery or had immunologic deficiencies. As there are no surgical options in this situation, the main treatment modalities revert to antibiotic selection and delivery.

Results: Intra-operative cultures from fifty-eight sinuses obtained through the natural middle meatal ostium yielded bacteriology similar to previous findings in the literature for chronic sinusitis, with the more prevalent pathogens being Staphylococcus aureus (25.9%), Haemophilus influenzae (8.6%) and Streptococcus pneumoniae (6.9%). In twenty-five sinuses that had persistent infections despite being deemed "adequately ventilated and draining" through endoscopic surgery, we found that the major pathogens were Staphylococcus aureus (48%) and Pseudomonas aeruginosa (40%).

Conclusion & Significance: Persisting sinus infections after technically adequate endoscopic sinus surgery have a higher incidence of Staphylococcus aureus and Pseudomonas aeruginosa, which has implications in the eventual medical management of these cases.

Poster/Abstract ID # 882

"Use Of Topical Epoxy Glue As An Alternate To Chemical Cauterization In The Management Of Uncomplicated Anterior Epistaxis: A Pilot Study"

Ashutosh Kacker, MD
Sheldon P Hersh, MD
New York, NY

Disclosure: No disclosures reported

Use of topical epoxy glue as an alternate to chemical cauterization in the management of uncomplicated anterior epistaxis - a pilot study hypothesis epistaxis occurs in 1 of every 7 people and is classified on the basis of the primary bleeding site as anterior or posterior. Hemorrhage is most commonly anterior, originating from the nasal septum. We propose the use of 2-octyl cyanoacrylate (2OCA) glue, topically as an alternate to cauterization. The application of 2OCA has the distinct advantage of avoiding discomfort as well as prevent the complications of cauterizations of the nasal septum. Setting Office-based study performed after obtaining IRB consent.

Material and Methods: All patients with uncomplicated anterior epistaxis were recruited for the study. The treatment protocol included control of epistaxis using topical vasoconstrictor agents followed by the application of 2-octyl cyanoacrylate glue in the study patients. The patients who refuse to participate in the study or fail treatment will be treated with chemical cauterization using Silver nitrate sticks.Results Ten patients were enrolled for the study in the who had the application of the 2OCA glue. All ten patients had no discomfort or recurrent epistaxis in the 3 months follow-up. There were no complications.

Conclusion: The use of 2OCA glue, topically to control anterior uncomplicated epistaxis is an alternate to electrical or chemical cauterization with minimal pain or discomfort.

Poster/Abstract ID # 892

"Respiratory Epithelial Adenomatoid Hamartoma of the Sinonasal Tract with Osseous Differentiation: A Case Report and Literature Review"

Eric Roffman, MD
Soly Baredes, MD
Rutherford, NJ

Disclosure: No disclosures reported

Respiratory epithelial adenomatoid hamartoma (REAH) is a rare sinonasal/nasopharyngeal lesion first described in 1995. Only 50 cases have been reported in the world literature. Of these fifty cases, chondroid and/or osseous differentiation within these lesions, otherwise termed chondro-osseous and respiratory epithelial (CORE) hamartomas, has been described in fourteen. We report a case of a 59 year old male with a CORE hamartoma involving the left posterior nasal cavity, ethmoid sinus, and sphenoid sinus. He presented with a three year history of progressive left nasal obstruction and left sided headaches. CT scan revealed an ill defined heterogeneous, partially ossified left sinonasal mass resulting in mild left nasal cavity and sphenoid sinus expansion. An intranasal biopsy was performed and pathology revealed REAH. He was later taken back to the OR for partial endoscopic resection in order to establish a comfortable nasal airway. Follow-up after 6 months showed no evidence of regrowth on nasal endoscopy, and the patient reported a patent left nasal airway. Due to the rarity of these sinonasal lesions, the otorhinolaryngic literature describing REAH and CORE hamartomas is quite limited. Yet, awareness of these entities is extremely important because grossly and histopathologically, these benign tumors appear exceedingly similar to both inverted papillomas and well-differentiated adenocarcinoma, particularly when chondro-osseous differentiation is absent. Failure to include these pathologic entities in one's differential diagnosis could result in unnecessary radical surgery. The literature regarding REAH and CORE hamartomas is reviewed, and their distinction from related entities of the sinonasal tract and nasopharynx is discussed.

Poster/Abstract ID # 872

"Total Serum Ige Level Change After Six Weeks Of Terbinafine Therapy For Chronic Sinusitis"

Frederick A. Kuhn, MD
Marc G. Dubin, MD
Farid Kianifard, PhD
Amir Tavakkol, PhD
Savannah, GA

Disclosure: This study was paid for by Novartis Pharmaceuticals. F. Kianifard and A. Tavikkol are employees of Novartis.

Introduction: Recently, the theory that chronic sinusitis is caused by fungus has been popularized. Based on empiric evidence that patients with sinusitis improved while taking terbinafine for oncychomycosis, Novartis Pharmaceutical Corporation investigated the efficacy of oral anti-fungal treatment for chronic sinusitis. Although the final analysis of the primary study is not yet complete, the data for evaluation of the total serum IgE levels is available.

Methods: A double blind placebo controlled study was performed in subjects with chronic sinusitis. Total serum IgE levels were collected at time zero and after six weeks of treatment with either placebo or 625 mg terbinafine. Results: There were 21 patients who started the trial with an elevated IgE. Twelve of these patients were treated with terbanifine, while nine were treated with placebo. Nine (75%) of the twelve subjects with elevated total IgE who were treated with terbanifine had a decrease in their total serum IgE after six, weeks while only four (44%) of nine controls decreased. Subjects with normal IgE levels tended to have stable levels throughout the time period regardless of treatment modality.

Conclusion: 75% of subjects with elevated total IgE who were treated with terbanifine had a decrease in their total serum IgE level over the treatment period as compared to 44% of subjects treated with placebo. The mechanism of this decrease is unknown, however, it could be postulated that it decreased the antigen load (i.e. fungus) or the drug modulated an inflammatory or immune response.

Poster/Abstract ID # 912

"Studies in Paranasal Sinusitis"

Larry Edwin Duberstein, MD
Memphis, TN

Disclosure: No disclosures reported

There are an estimated 32 million people suffering from chronic sinusitis in the United States today. Of those millions, about half occur in the southeast region alone with recurring symptoms after their first treatment. Focusing medical efforts to the correct area of disease would decrease medical costs, in that patients would be making fewer trips to the doctor and purchasing fewer rounds of medications. In order to effectively treat this disease, we propose to medicate the underlying infected bone within the nose in addition to the mucus, rather than the mucus alone. To treat infected bone, the patient was placed on an intravenous antibiotic regimen that lasts for about twelve weeks. In addition, nasa decongestants and pain relievers were prescribed to reduce some of the symptoms. During the weekly visit, the patient was asked to rank their symptoms from one to ten. The data was then compiled to determine which symptom(s) had the largest change over time. Statistical analysis were done in order to subjectively estimate the time it took for the antibiotics to be most effective. The objective outlook to this study involved assembling weekly nasal sinus photographs into a sinusitis scale of magnitude. We present an additional cohort of patients with this therapy and present new results. The analysis showed the largest percent of changes in symptoms related to bone, headache and facial pain. Though the sample size of data is larger, it was assumed that this trend will continue as studies are done on a larger sample size. On average, the treatment was most effective after 9.5 weeks.

Poster/Abstract ID # 876

"Anterior Ethmoid Mucocele After Posterior Fossa Radiotherapy"

Matthew Ryan Stumpe, MD
Rose Mary Stocks, MD
Rakesh Kumar Chandra, MD
Memphis, TN

Disclosure: Dr Chandra Glaxo-Smith-Kline speaker.

Background: Mucoceles of the paranasal sinuses may develop following facial trauma or as a complication of sinus/cranial surgery. Chronic sinus inflammation and allergic disease are possible cofactors in the development of these lesions. Sphenoid mucoceles have also been described as a complication of radiotherapy in patients with nasopharyngeal carcinoma. We report the case of an 11-year-old male with a right anterior ethmoid mucocele that developed after radiotherapy for a right occipital anaplastic astrocytoma.

Case Report: The patient underwent neurosurgical resection of the occiptal lesion followed by six weeks of external beam radiotherapy and concomitant chemotherapy with temozolomide. Pre- and post-operative imaging revealed no evidence of the mucocele. Radiation was delivered in single daily fractions, with a total tumor dose of 59.4 Gy. Following the conclusion of radiotherapy, the patient reported progressive headache. Magnetic resonance imaging of the brain with and without IV contrast five months after therapy revealed an anterior ethmoid mass, consistent with a mucocele. A coronal CT of the maxillofacial area without contrast confirmed this finding. This patient subsequently underwent image-guided endoscopic sinus surgery for marsupialization of the lesion. Pathology demonstrated no evidence of malignancy. The patient has done well postoperatively.

Significance: This case highlights the observation that mucoceles may develop secondary to radiation in sites remote from the epicenter of therapy.

Poster/Abstract ID # 908

"A Case Report On Primary Intestinal Type Sinonasal Adenocarcinoma"

Trang Vo-Nguyen, MD
Holly C. Boyer, MD
Minneapolis, MN

Disclosure: No disclosures reported

A case report on primary intestinal type sinonasal adenocarcinoma objectives: To discuss the risk factors, diagnosis, prognosis, and management of sinonasal adenocarcinoma.

Methods: Case report.

Results: An 81yo man with history of nasal congestion and left-sided facial pain for three months. Patient had failed two courses of oral antibiotic prior to being seen in the Otolaryngology Clinic. On nasal endoscopy, patient was found to have a whitish mass in the area of the left middle meatus. CT scan of the sinuses revealed a large mass involving the left maxillary, ethmoid, and sphenoid sinuses suggestive of a papilloma. The patient was treated with surgical resection using endoscopic technique. Pathology report came back as primary intestinal type sinonasal adenocarcinoma. A decision was made to follow the patient closely with repeat CT sinuses with no further intervention.

Conclusions: Sinonasal adenocarcinoma is a rare malignancy of the sinuses. The disease is commonly associated with wood and textile workers. The symptoms are non-specific, and vary from nasal obstruction to epistaxis. Histologic evaluation is the only means of diagnosis. Different histologic subtypes include papillary, alveolar, and solid forms. Factors that influence prognosis are tumor stage and intracranial involvement. Small, low-grade tumors that do not significantly extend passed the nasal cavity can be treated with surgery alone. All other tumors should be treated with a planned combination of surgery and radiation therapy.

Poster/Abstract ID # 881

"Treatment Of Embryonal Rhabomyosarcoma Of The Sinus And Orbit With Chemotherapy, Radiation, And Endoscopic Surgery"

Quang Cat Luu, MD
Joseph Lasky, MD
Theodore Moore, MD
Marilene Wang, MD
Los Angeles, CA

Disclosure: No disclosures reported

Educational Objective: To discuss evaluation and management of a case of a teenage girl with parameningeal embryonal rhabdomyosarcoma who presented with right eye blindness. Objectives: This is a report of an unusual case of a teenage girl with parameningeal embryonal rhabdomyosarcoma who presented with right eye blindness and a nasal mass. Radiographic findings, pathology, operative technique, and treatment course will be presented. Study Design: Case report

Methods: A 14 year-old girl presented with sudden onset of right-sided blindness and a nasal mass. Initial work-up included an MRI and biopsy of the nasal mass. Her subsequent treatment and clinical course are reported.

Results: MRI demonstrated a lobulated, partially enhancing soft tissue mass centered in the posterior right ethmoid and sphenoid sinuses, with superior extension into the sellar region, splaying the right optic nerve. Biopsy of the nasal mass revealed embryonal rhabdomyosarcoma. The patient was treated with vincristine, actinomycin, and cytoxan, as well as radiation therapy. She had dramatic shrinkage of her tumor mass after radiation and several courses of chemotherapy. She then underwent endoscopic removal of the tumor from the right ethmoid and sphenoid sinuses. She is continuing to receive chemotherapy postoperatively and has regained light perception in the right eye.

Conclusions: Parameningeal embryonal rhabdomyosarcoma in the sphenoid/ethmoid sinus is a rare tumor which can respond well to chemotherapy and radiation. Surgical resection of residual tumor is indicated following chemotherapy and radiation.

Poster/Abstract ID # 919

"Mycobacterium Chelonae Sinusitis In Children With Cystic Fibrosis"

Seth M. Brown, MD
Joan K. DeCelie-Germana, MD
Gerald D. Zahtz, MD
Mark J. Shikowitz, MD
Bronx, NY

Disclosure: No disclosures reported.

Introduction: Mycobacterium chelonae (M. chelonae) is a ubiquitous organism that is infrequently a pathogen. This organism, when involved in infections, most commonly causes keratitis or wound infections. However, it is an extremely rare cause of sinusitis, with only two cases of M. chelonae sinusitis reported in the literature. It is an important entity to recognize because eradication of this organism can be very difficult with patients often requiring greater than 6 months of triple antibiotics including intravenous treatment and multiple surgical procedures.

Methods: We report two young female patients who are routinely followed at our Cystic Fibrosis (CF) Center. The first patient had sinusitis refractory to medical therapy and was M. chelonae positive on cultures. Subsequent bronchoscopy confirmed the organism in the lungs. The second patient had positive endoscopic directed sinus cultures after M. chelonae was noted in the lungs. Results: One patient had an aggressive sinus procedure and now has negative sinus cultures and improvement in her lung disease. The second did not have surgery and remains colonized. Conclusions: We note two children with classic CF and M. chelonae sinusitis. The questions arise whether disease in the lungs is affected by a reservoir in the sinuses and should sinus cultures and debridement be performed in all cases in the CF population. Since M. chelonae can be an unusual cause of sinusitis, it needs to be considered in patients with refractory sinus disease, particularly those with CF. As these and more cases are noted, treatment recommendations will continue to be developed.

Poster/Abstract ID # 901

"Bilateral Intracranial Mucoceles Following Endoscopic Repair of Encephaloceles: A Case Report"

Richard Adam Lebowitz, MD
Elisa Lynskey, MD
Joseph Barry Jacobs, MD
New York, NY

Disclosure: No disclosures reported.

A 33 yo male patient initially presented with an altered mental status and CSF rhinorrhea. He was diagnosed with a large benign epidermoid tumor, massive hydrocephalus, and bilateral nasal encephaloceles. He underwent placement of a ventriculo-peritoneal shunt followed by endoscopic encephalocele resection, and extracranial repair of the skull base defects. The patient did well post-operatively, with resolution of the CSF rhinorrhea. Two years later, a routine surveillance MRI demonstrated the presence of bilateral anterior cranial fossa mucoceles. The mucoceles were successfully drained via a transnasal endoscopic approach, however, the patient developed recurrent CSF rhinorrhea and pneumocephalus. The patient subsequently underwent repair of the anterior skull base defect and cranialization of the frontal sinus via a frontal craniotomy. We will discuss treatment options and decision making in the treatment encephaloceles and mucoceles.

Poster/Abstract ID # 883

"Treatment of Idiopathic Sudden Sensorineural Hearing Loss"

Anita Jeyakumar, MD
David Francis, MD
Timothy Doerr, MD
Rochester, NY

Disclosure: No disclosures reported.

Objectives: To investigate treatment regimens and their efficacies, as well as evaluating the potential prognostic correlates and allowing comparison between local and national standards of care for sudden sensorineural hearing loss.

Study Design: A retrospective evidence-based case series was done of 104 patients seen at the University of Rochester, Department of Otolaryngology between 1999 and 2002. Treatment modalities included (1) observation, (2) steroids, and (3) steroids with antivirals. Results: The study demonstrates that steroid treatment, alone or in combination with antivirals, results in a significant improvement rate compared to observation.

Significance: The therapeutic role of corticosteroids and/or corticosteroids with antivirals for sudden sensorineural hearing loss has yet to be fully elucidated, however, in cases where deafness is profound and of recent onset, a therapeutic trial is indicated.

Golden Head Mirror Honor Award For Meritorious Teaching in Rhinology

The Golden Head Mirror Honor Award was first given by Dr. Maurice Cottle to colleagues who were chosen because of "Meritorious Teaching in Rhinology". The first pair of Golden Head Mirror Cuff Links was given by Dr. Cottle to Dr. George Fisher in 1948.

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Vijay Anand, US
Pierre Arbour, US
Harold Arlen, US
Walter J. Aagesen, US
Tomas L. Aguara, Mexico

B
Pat A. Barelli, US
Fred W. Beck, US*
Carlos G. Benavidee, US
Michael Benninger, US
Bernard Blomfield, US*
Max Bornstein, US*

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Jamie Carillo, Mexico*
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Maurice H. Cottle, US*

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H.A.E. van Dishoeck, The Netherlands*
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Glen W. Drumheller, US
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Henry L. Williams, US*
Russell I. Williams, US

* Deceased

Dr. Maurice H. Cottle Honor Award

For Outstanding Clinical and Laboratory Incestigation in Rhinology First Place Gold Medal Winners

1978
The Nasal Cycle in the Laboratory Animal
Winston M. Campbell, MD, Mayo Clinic, Rochester, MN
Eugene B. Kern, MD, Mayo Clinic, Rochester, MN

1979
The Physiologic Regulation of Nasal Airway Resistance During Hypoxia and Hypercapnia
T.V. McCaffrey, MD, Mayo Clinic, Rochester, MN
Eugene B. Kern, M.D., Mayo Clinic, Rochester, MN

1980 (Two Awards Given)
Growth Patters of the Rabbit Nasal Bone Region – A Combined Serial Gross Radiographic Study with Metallic Implants
Bernard C. Sarnat, MD, Los Angeles, CA
Abbee Selman, DDS, Los Angeles, CA

Sleep Disturbances Secondary to Nasal Obstruction
Kerry D. Olsen, MD, Mayo Clinic, Rochester, MN
Eugene B. Kern, MD, Mayo Clinic, Rochester, MN
Phillip R. Westbrook, MD, Mayo Clinic, Rochester, MN

1984
Nasal Problems in Wood Furniture Workers-A Study of Symptoms and Physiological Variables
Borje Drettner, MD, Sweden
Bo Wihlelnisson, MD, Sweden

1987
Eustachian Tube and Nasal Function During Pregnancy – A Prosepective Study
Craig S. Derkay, MD, Pittsburgh, PA

1988
The Effects of Kiebsiella Ozenae on Ciliary Activity in Vitro: Implications for Atrophic Rhinitis
Jonathan Ferguson, MD, Mayo Clinic, Rochester, MN

1990
The in Vivo and in Vitro Effect in Phnylephirine (Neo Synephrine) on Nasal Ciliary Beat Frequency and Mucoolliary Transport
P. Perry Phillips, MD, Mayo Clinic, Rochester, MN

1991
Ultrastructural Changes in the Olfactory Epithelium in Alzheimer's Disease
Bruce Jafek, MD, University of Colorado, Denver, CO

1992
A Scanning Electron Microscopic Study of Msoking and Age Related Changes in Human Nasal Epithelium
Steven Kushnick, MD, New York, NY

1993
Mucociliary Functionin Endothelins 1, 2 & 3
Finn Ambie, MD, Mayo Clinic, Rochester, MN

1996
Capsacin's Effect on Rat Nasal Mucosa Substance P Release
Frederick A. Kuhn, MD, Savannah, GA

1999
Subacute Effects of Ozone-Exposure on Cultivated Human Respiratory Mucosa
Joseph Gosepath, MD, D. Schaefer, MD, C. Broomer, MD, L. Klimek, MD, R.G. Amedee, MD, W.J. Mann, MD, Mainz, Germany

2000
Capsacin's Effect on Trigenonal Nuciens Substance P Release
Frederick A. Kuhn, MD, Savannah, GA

2002
Bioengineering of Cartilage Using Human Nasal Chondrocytes Propagated in Microcarrier Spinner Culture
Alan H. Shikani, MD, David J. Fink, Ph.D., Afshin Sohrabi, M.H.S., Phong Phan, BS, Anna Polotsky, MD, David S. Hungerford, MD, Carmelita G. Frondoza, Ph.D, San Diego, CA

2004
Composition Of Hyaluronan Affects Wound Healing In The Rabbit Maxillary Sinus
Matthew Proctor, M.D., Kery Proctor, M.D., Xian Zheng Shu, PhD., L.D. McGill, DVM,PhD., Glenn D. Prestwich, PhD., Richard R. Orlandi, M.D.

ARS Investigator Award

2004
Assessment of Bacterial Biofilms in Sinusitis
James N. Palmer, MD

2002
Characterization of Eosinophil Peroxidase-Induced Tissue Damage in Sinonasal Polyposis and Chronic Rhinosinusitis
Martin J. Citardi, MD

Influence of Estrogen on Maturation of Olfactory Neurons
Karen J. Fong, MD

2001
Apoptosis in the Aging Olfactory Mucosa
David B. Conley, MD

ARS Poster Awards

COSM 2004
1st Place: **Longterm effects of Floseal nasal packing after ESS**
Rakesh K Chandra, MD, David B. Conley, MD, Robert Kern, MD

2nd Place: **Evidence based use of topical nasal anesthesia for flexible transnasal endoscopy.**
Rhoda Wynn, MD, Boris L. Bentsianov, MD

3rd Place: **Pnemocele of the maxillary sinus: case report and literature review**
B. Todd Schaeffer, MD

Fall Annual Meeting – 2004
1st Place: **"Modeling Pre & Post-Operative Airflow and Odorant Delivery Pattern in the Nasal Cavity: A Quantitative Evaluation of Surgical Intervention"**
Kai Zhao, MD

2nd Place: **"Presence of Sufactant Lamellar Bodies in Normal and Diseased Sinus Mucosa"**
Bradford Woodworth, MD

3rd Place: **"The Effect of Histamine on Rhinovirus-16 Infection in Airway Epithelial Cells"**
Yoo-Sam Chung, MD

International Research Award Winners

2004
Development Of A Rhinovirus Study Model Using Organ Culture Of Turbinate Mucosa
Yong Ju Jang, MD, Si Hyeong Lee, MD, Hyon-Ja Kwon, MSc, Yoo-Sam Chung, MD, Bong-Jae Lee, MD

2003
Nitric Oxide and Collagen Expression in Allergic Upper Airway Disease
Marc A. Tewfik, MD, Julio F. Bernardes, MD, Jichuan Shan, MD, Michelle Robinson, MD, Saul Frenkiel, MD, David H. Edelman, MD

2002
Recording of the Electro-Olfactogram (EOG) Using Externally Placed Electrodes
Churunal K. Hari, FRCS, Liwei Wang, PhD, Tim J.C. Jacob, PhD, San Diego, CA

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