



**2009 SCIENTIFIC PROGRAM, 63rd ANNUAL MEETING
MARRIOTT HARBOURFRONT HOTEL
HALIFAX, NS**

**SUNDAY, MAY 10, 2009 - MORNING
HALIFAX ABC BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

OPENING SESSION

Chair – Dr. D. Dorion, President

- 08:00-08:20** *Welcome, Presidential Address and Introduction of Guests of Honour, Drs. Jacques Dionne, Québec, QC and Dr. Ralph Gilbert, Toronto, ON – D. Dorion, SHERBROOKE, QC*
- 08:20-09:20** *Keynote Speaker H. Yigit Aydede: Economic Implications of Aging Societies – Y. Aydede, HALIFAX, NS*
- 09:20-10:15** *Guest Speaker Dr. Jean-Louis Lefebvre: Recent Trends in Head and Neck Oncology Research – J. L. Lefebvre, LILLE, FRANCE*
- 10:15-10:30** COFFEE BREAK
- 10:30-11:30** *Guest Speaker Dr. Leslie Halpern: Domestic Violence and ENT – L. Halpern, BOSTON, MA*
- 11:30-12:30** *The Four Prognosticators:
The Future of Facial Plastic Surgery - Facts & Fantasies – Adamson, P., TORONTO, ON
Otology 2035 – Bance, M., HALIFAX, NS
Taking Off Our Loupes and Looking Forward: Focusing on Head and Neck Oncology in 20/20 – Irish, J., TORONTO, ON
A Look Down the Crystal Endoscope - The Future of Rhinology – Wright, E., EDMONTON, AB*
- 12:30-13:30** LUNCH SEMINAR: CMA's MD Financial Guest Speaker, SCHOONER ROOM, CASINO NOVA SCOTIA

**SUNDAY, MAY 10, 2009 – AFTERNOON
HALIFAX A BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Workshop #1

13:30-14:30 *How to Write a Successful Clinical Research Grant ... For Not-So-Dummies – S. Hall, KINGSTON, ON*

Learning Objectives

At the end of this workshop the attendees will be better prepared to complete and submit a successful clinical research grant application.

Abstract #1

Objective: To present a series of practical steps based on lessons learned on how to prepare a successful research grant.

Background: Grantsmanship courses are offered at most universities but may be impractical due to the research setting or the objectives of the project. This workshop is designed to be a practical session consisting of a series of steps that will improve the chances of success of the attendee in a future competition.

Method: The organization of a grant application will be reviewed based on the experience of the presenter.

Workshop #2

14:30-15:30 *Understanding the Manuscript Review Process – Optimizing Chances for Getting a Manuscript Accepted for Publication – E. Wright, H. Seikaly, S. Leavitt-Wright, EDMONTON, AB*

Learning Objectives

At the conclusion of this workshop participants will:

1. have a greater familiarity with the Manuscript One website and be able to effectively submit manuscripts for peer review;
2. have a refined insight into criteria that make a case report more likely to be accepted for publication;
3. have developed good understanding of the current manuscript review.

Abstract #2

Editors of scholarly journals are frequently faced with manuscript submissions that are strong on content and with novel ideas but that are hampered in the peer review process by weaknesses with regard to presentation, submission, and structure. Further, virtually all journals have evolved to electronic submission only with this form of communication the sole manner for

communicating with authors. We propose a workshop aimed at prospective authors interested in optimizing their chances of successfully submitting a manuscript for publication. Using specific examples from recent experience of the Editorial Office, we aim to share with prospective authors tips for manuscript preparation and optimization of content as well as an overview of the peer review process currently employed by the Journal. We will also share details of the electronic submission process and common errors as well as a demonstration of website functionality. Finally, we will share specific suggestions regarding the preparation of case reports as well as the criteria for review and acceptance currently in place at the Journal office.

Workshop #3

16:00-17:00 *Medical Economics Meets Ethical Considerations in Bilateral Cochlear Implantation and Free Tissue Transfer* – L. Johnson, R. Hart, T. Brown HALIFAX, NS

Learning Objectives

1. To ethically evaluate the state of advancing technology in the face of limited financial resources.
2. To ethically debate the benefit of new technology trends and defend surgical outcomes in the face of limited financial resources.
3. To enhance our awareness of the crossroads between the economics and ethics of treating our patients.

Abstract #3

A panel group is to present and discuss the ethical considerations of bilateral cochlear implantation and free tissue transfer when faced with finite financial resources in our current health care system. The panel members will consist of a medical economist, an ethicist, one or two neurotologists, as well as a head and neck surgeon. Issues to be discussed include patient autonomy and overall surgical benefit in the setting of financial restrictions, government-imposed financial constraints when implementing new, more expensive technology, and comparing the overall economic impact of these new technologies. Financial sustainability, patient outcomes, and expanding expensive technology will be debated.

**SUNDAY, MAY 10, 2009 - AFTERNOON
HALIFAX BC BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Workshop #4

13:30-14:30 *Follow Up of Well Differentiated Thyroid Cancer* – N. Audet, QUEBEC, QC

Learning Objectives

At the end of the workshop the general otolaryngologist will be able to stratify risk factors for death and recurrence of well differentiated thyroid cancer. She/he will be able to apply thyroid cancer follow up guidelines in accordance to patient's risk factors.

Abstract #4

The incidence of thyroid pathology has increased significantly in the last few years. The practicing otolaryngologist is an integral part of thyroid cancer investigation, diagnosis, treatment and follow up. We will review different clinico-pathologic staging systems. The participant will be able to risk stratify patient's for death and recurrence of well differentiated thyroid carcinoma. We will discuss international clinical guidelines for the follow up of well differentiated thyroid cancer and apply their recommendations to an every day practice by using clinical vignettes.

Workshop #5

14:30-15:30 *Glottic and Subglottic Stenosis in Adults* – D. Bosch, CALGARY, AB M. Allegretto, EDMONTON, AB

Learning Objectives

By the end of this one hour workshop participants will be able to discuss the prevention and pathophysiology of Glottic and Subglottic Stenosis and be more capable in diagnosing and managing these difficult problems in their own practice and education settings.

Abstract #5

Methods: Dr. Doug Bosch (Calgary Laryngologist) and Dr Mike Allegretto (Edmonton Laryngologist) , (and a yet unnamed Eastern Canadian Laryngologist) will present the Prevention, Incidence, Etiology, Classification and Management of Glottic and Subglottic Stenosis. Each of the subjects will be presented separately and the management options discussed. Preop, Intraop and Post op videos and photographs will be used to demonstrate these points. There will be case presentations to encourage Audience participation

Results: The presenters will present their opinions on the results of each management approach, and will give an overview of their own results. The Management of Subglottic stenosis has a fairly well accepted stepwise approach to management including Endoscopic and ultimately Open approaches. The management of Glottic Stenosis is more controversial and generally more difficult and involves both open and endoscopic approaches.

Conclusions: The Authors hope this workshop will give a current overview of Glottic and Subglottic Stenosis, and aid the practicing Otolaryngologist in currently managing this difficult problem. We also hope this workshop will foster good discussion amongst the practitioners who deal with this difficult problem.

The objectives of this workshop will be to review the etiology, diagnosis and management of adult glottic and subglottic stenosis, in 2009, for the practicing otolaryngologist and otolaryngology residents.

Workshop #6

16:00-17:00 *Upper Facial Rejuvenation with Botox* – M. Taylor, HALIFAX, NS

Learning Objectives

1. To discuss upper facial anatomy.
2. To outline the preparation and mechanism of action of Botox.
3. To review the treatment of the upper face with Botox and to discuss potential complications and treatment.
4. To perform a live demonstration of Botox treatment for the upper face.

Abstract #6

Objective: To discuss the use of botox for upper facial rejuvenation.

Methods: The workshop will discuss the relevant facial anatomy required to treat the upper face with botox for both therapeutic and esthetic reasons. The method of storage, preparation, mechanism of action, and injection techniques will be addressed. A live demonstration is planned to enhance the quality of the workshop.

Results: Attendance should provide the physician with the knowledge base necessary to perform botox injections safely and effectively.

Conclusion: Botox is a common treatment which is becoming more widespread in Otolaryngology-Head and Neck Surgery. This treatment is easily performed in the office setting and is an excellent addition to the practicing Otolaryngologist.

SUNDAY, MAY 10, 2009 - AFTERNOON COMPASS ROOM, CASINO NOVA SCOTIA

Workshop #7

13:30-14:30 *The Comprehensive Surgical Management for Rehabilitation of the Paralyzed Face* – J. Yoo, D. Matic, LONDON, ON, R. Gilbert, J. Chen, TORONTO, ON

Learning Objectives

1. After the presentation, the participant will understand the basic science of facial nerve injury.
2. The participant will understand how to evaluate the patient with a paralyzed face.
3. The participant will understand the recognize treatment options in facial nerve rehabilitation.
4. The participant will be able to develop a strategy for the management of a patient with facial paralysis.

Abstract #7

Patients with facial paralysis are burdened with significant social, emotional, functional, and aesthetic impairment. Surgical rehabilitation of the paralyzed face pose considerable challenges even to the most experienced practitioner. The complexity of the problem is exemplified by the exhaustive menu of treatments options that include various static suspensions, dynamic muscle transpositions, nerve grafts and free tissue transfers. Furthermore, one needs to address several isolated aesthetic and functional units which often require targeted approaches. Patient-specific factors, nature of injury, duration of loss, and remaining anatomic integrity are important considerations in the decision-making process towards treatment plan.

This workshop will provide a comprehensive yet practical approach for patients with facial paralysis. An experienced panel consisting of a Head and Neck Surgeon, Neuro-otologist, and Plastic Surgeon will share their approaches using case-based examples. Specific topics that will be addressed will include

- a) biology of nerve injury
- b) patient evaluation
- c) management of the upper face
- d) management of the lower face
- e) static and dynamic suspension
- f) re-innervation and free tissue transfer

Workshop #8

14:30-15:30 *Chronic Cough: Seeing the Light at the End of the Tunnel* – K. Kost, MONTREAL, QC, D. Eibling, J. Anderson, K. Fung, LONDON, ON

Learning Objectives

1. To understand the differential diagnosis of cough.
2. To understand the appropriate workup of the patient with cough.

3. To appreciate the various management strategies and how to apply them in selected cases.

Abstract #8

Methods: Selected case studies will be used to illustrate key points in the diagnosis, work-up and treatment of the patient with cough. Audience participation is welcome and will be solicited.

Results: Establishing the correct diagnosis allows for targeted treatment of the patient with cough. The role of various therapeutic modalities including speech therapy will be discussed.

Conclusions: While the diagnosis and work-up of cough are often fairly straightforward, choosing from the treatment options available may be difficult or confusing. This workshop aims to demystify the diagnosis and treatment of cough for practising otolaryngologists.

MONDAY, MAY 11, 2009 - MORNING HALIFAX A BALLROOM MARRIOTT HARBOURFRONT HOTEL

Special Workshop

07:00-08:00 *Review of Mastoidectomy Techniques for the General Otolaryngologist*

CHAIR: B. Westerberg, VANCOUVER, BC

PANEL: M. Bance, HALIFAX, NS, J. Chen, TORONTO, ON, F. Kozak, VANCOUVER, BC,
J. Rappaport, MONTREAL, QC

Learning Objectives

By the end of this session, the General Otolaryngologist will be able to;

1. Apply appropriate surgical techniques during mastoidectomy for patients with otitis media.
2. Evaluate the pre-operative clinical and radiological characteristics relevant to deciding a surgical approach.
3. Consider the factors relevant to management of canal fistulae in mastoidectomy surgery.

Abstract #9

Objective: To review appropriate approaches to maximize successful mastoid surgery for management of patients with chronic otitis media.

Participants: This workshop is designed to meet the requirements of General Otolaryngologists who perform mastoid surgery as part of their general otolaryngology practice, and of otolaryngologists in-training who expect to perform mastoid surgery.

Workshop Outline:

- A. Using intra-operative video examples, surgical pearls will be presented for relevant portions of mastoid surgery.
- B. The panel will be presented clinical examples of patients with chronic otitis media. Relevant issues to patient management will be highlighted.

This symposium is supported by **ALCON CANADA** through a non-restricted educational grant.

MONDAY, MAY 11, 2009 - MORNING HALIFAX A BALLROOM MARRIOTT HARBOURFRONT HOTEL

Paper Session: GENERAL OTOLARYNGOLOGY

Chair: Dr. Linda Maxwell, Saint John, NB

08:00-08:08 *Patient Outcomes After Soft Palate Implant Placement for Treatment of Primary Snoring* – H. Alsafa, B. Rotenberg, T. Kandessamy, LONDON, ON

Learning Objectives

1. Attendees will gain an enhanced appreciation for methods of snoring treatment.
2. Attendees will gain an improved understanding of the pathophysiology of snoring.
3. Attendees will understand the technique of soft palate implant placement.

Abstract #10

Objective: To evaluate a palatal implant system in the treatment of primary snoring caused by retrovelar collapse in individuals without obstructive sleep apnea.

Methods: Prospective study comparing snoring outcomes pre- and post- soft palate implantation. Snoring patients without sleep apnea were offered palatal implantation after assessment via strict inclusion/exclusion criteria. Snoring severity was rated by the bed partner, in a longitudinal fashion, using a validated Snoring Scale, both in the pre-operative and post-operative setting. Paired-

Student's t-tests were used to compare the mean Snoring Scale values preoperative and at different points of time post operatively up to one year. Body mass indices were also assessed as possible confounders.

Results: Twenty-five patients were studied over a follow-up time of one year. A statistically and clinically significant improvement in the Snoring Scale was noted over the 52 week time period (mean pre-op score = 9.5, mean post-op score = 5.5, $p < 0.001$). Body mass index was not a significant confounder.

Conclusion : Soft palate implantation is a safe and effective technique for achieving a subjective improvement in the intrusiveness of primary snoring as noted by the bed partner.

08:08-08:16 *Superiorly-based Pharyngeal Flap Surgery for Velopharyngeal Insufficiency (VPI): When Do We See an Improvement and Is It Maintained?* – S. Nabi, S. Tan, M. Husein, et al. LONDON, ON

Learning Objectives

1. Understand the current literature on velopharyngeal insufficiency, its etiology, presentation, diagnosis and treatment options.
2. Recognize the efficacy of superiorly-based pharyngeal flap surgery for the treatment of VPI on speech outcomes, and that the effect occurs shortly after surgery and is maintained on subsequent postoperative visits.

Abstract #11

Objectives: To evaluate speech outcomes and timeline to improvement in VPI patients treated with superiorly-based pharyngeal flaps.

Methods: Retrospective review of all forty patients with VPI receiving a first time superiorly-based pharyngeal flap by one surgeon from 2004-2008. Diagnosis was made via speech assessment, multi-view videofluoroscopy and nasopharyngoscopy in a multi-disciplinary VPI clinic. Data were collected pre- and postoperatively. The primary outcome was the ACPA perceptual evaluation (hypernasality, hyponasality and nasal air emission). The secondary outcome was nasometry (SNAP test).

Results: The initial postoperative visit showed that superiorly-based pharyngeal flaps achieved improvement of hypernasality from preoperative measures ($p < 0.0001$). Significant reductions in nasal air emission were also noted in the pre- and initial postoperative comparisons ($p < 0.0001$). No differences were noted in hyponasality measures in the same period. No significant differences in hyper- or hyponasality or nasal airway emission were observed between the first and second postoperative measures. Analysis of the nasometry data also indicated significant postoperative reductions in nasal airflow consistent with the perceptual assessments.

Conclusion: Superiorly-based pharyngeal flaps are the workhorse for VPI treatment in patients with palatal dysfunction /incompetence. These results indicate that improvement occurs early after surgery and is maintained on subsequent visits.

08:16-08:24 *Patient Perspectives on Palatal Implants for Treatment of Snoring and Obstructive Sleep Apnea/Hypopnea Syndrome* – B. Wickens, B. Lui, J. Korkis, HAMILTON, ON

Learning Objectives

- 1) To review the clinical definition, pathophysiology and staging of Obstructive Sleep Apnea/Hypopnea Syndrome (OSAHS)
- 2) To review treatment options for snoring and OSAHS.
- 3) To review current medical literature regarding palatal implants for treatment of snoring and OSAHS.
- 4) To discuss the effect of palatal implant treatment on snoring and OSAHS symptoms, and patient factors which may predict these effects.

Abstract #12

Background: Snoring and Obstructive Sleep Apnea/Hypopnea Syndrome (OSAHS) are commonly treated in Otolaryngology practices. Snoring affects 53% of men and 38% of women, disturbs sleep-partners and is a cause of significant patient embarrassment. OSAHS affects 3% of the population, and is correlated with excessive daytime sleepiness and increased risk of cardiovascular disease. Palatal implantation is an office-based, minimally invasive treatment for snoring and mild to moderate OSAHS, and involves stabilizing the soft-palate with synthetic implants. Studies are needed to further examine changes in OSAHS and snoring symptoms, complication rates and severity, and patient and partner satisfaction following palatal implantation. Correlation of these indicators with patient factors such as gender, BMI, and pre-operative history and examination findings will provide insight into which patient populations may benefit from this novel procedure.

Methods: Retrospective chart review and survey of 30 patients who have been treated with palatal implantation for snoring and OSAHS. Patients and their partners completed a survey which assessed procedure complications and satisfaction, and pre- and post-procedure snoring loudness, quality of sleep, and daytime sleepiness using visual analogue scales (VAS) and the Epworth Sleepiness Scale (ESS). These data were correlated with patient gender, BMI and pre-operative history and examination findings.

Results and Conclusions: pending.

08:30-08:38 *Percutaneous Tracheostomy - A Prospective Study Evaluating a New Technique* – M. Chater, K. Kost, N. Jowett et al. MONTREAL, PQ

Learning Objectives

By the end of this session, the audience will be familiar with:

1. The technical details of the Blue Dolphin Percutaneous Tracheostomy Device.
2. The safety, cost and ease of use of the “Blue Dolphin” device.
3. The advantages and disadvantages of the technique.

Abstract #13

Background: Over two-thirds of modern-day tracheostomies are performed in adult, intubated intensive care unit (ICU) patients. The procedure may be undertaken in the operating room or at the bedside. In this particular patient subset, endoscopic percutaneous dilatational tracheostomy (PDT) is widely employed as the procedure of choice in Europe and many centers in North America. The “Blue Dolphin” is a new as yet untested device that has become available for performing bedside PDT.

Objectives: To prospectively evaluate the technique, cost and safety of the “Blue Dolphin” as a new method for performing bedside percutaneous tracheostomy.

Methods: The “Blue Dolphin” was prospectively evaluated in 25 consecutive adult intubated ICU patients at the McGill University Health Centre (MUHC) between August 1, 2008 and March 30, 2009. In addition to procedure time and ease of performance, detailed patient data were recorded including immediate and delayed procedure-related operative complications.

Results: Initial experience with five patients has yielded favorable results. Detailed data will continue to be collected until the termination of the study March 30, 2009.

Conclusions: The “Blue Dolphin” is a new percutaneous tracheostomy device. To our knowledge, this prospective study of 25 patients is the first in North America to evaluate the technique, cost, and safety of the device.

08:38-08:46 *Intralesional Corticosteroid Injection and Dilatation Provides Effective Management of Subglottic Stenosis in Wegener’s Granulomatosis* – N. Wolter, I. Witterick, TORONTO, ON

Learning Objectives

During this presentation we intend to:

1. To discuss management of subglottic stenosis in Wegener's granulomatosis patients.
2. To compare and contrast management of subglottic stenosis in patients with and without Wegener's granulomatosis.

Abstract #14

Objective: To determine the effectiveness of intralesional corticosteroid injection and dilatation (ILCD) of subglottic stenosis (SGS) in patients with Wegener’s Granulomatosis (WG) and compare them to those without.

Methods: A retrospective chart review was done of all patients with SGS requiring ILCD, using the Cleveland Clinic protocol, from 2003-2008 at Toronto’s Mount Sinai Hospital. Patients were grouped by those with WG and those without for comparison.

Results: 12 patients with SGS underwent 36 operations with a mean of 3 procedures per patient. 8 of these patients suffered from WG and 4 did not. WG patients received a mean of 3.37 procedures whereas 2.25 were averaged for non-WG and maintained 11.9 and 8.1 months of patency respectively. Only 1 complication was identified and no long term sequelae were found.

Conclusion: Our data supports previous literature stating that ILCD provides safe and effective treatment of SGS in WG and outcomes differ only slightly from the non-WG population.

08:46-08:54 *A Clinical Approach to Monitoring Variability Associated with Adductor Spasmodic Dysphonia* – J. Yeung, K. Fung, A. Day et al. LONDON, ON

Learning Objectives

By the end of this presentation, the participant will understand that the composite measure of laryngeal overpressure is a practical clinical tool that has a direct relationship to absolute acoustic variability associated with adductor spasmodic dysphonia.

Abstract #15

Objectives: Adductor spasmodic dysphonia (ADSD) is a voice disorder characterized by considerable intra- and intersubject variability. Although objective, acoustic measures of voice may provide a metric for ADSD, such measures can be inefficient in documenting such characteristics. This project integrated a simple auditory-perceptual measure termed “laryngeal overpressure” (LO) with measures of acoustic variability.

Methods: Ten adults diagnosed with ADSD were sequentially followed over a period of 3-6 months. Standard voice recordings were obtained at each point and acoustic measures gathered. Additionally, a group of 3 experienced listeners then rated LO using a visual analog scale and acoustic variability was assessed relative to the measure of LO.

Results: Data suggest that LO provides a simple, time-efficient, and reliable means of quantifying the severity of voice characteristics associated with ADSD. The composite measure of LO appears to have direct relationship to absolute acoustic variability associated with ADSD.

Conclusions: LO appears to provide an easy clinical method of documenting voice change over time in those with ASD. Although additional methods of voice monitoring may be utilized, the use of LO may provide the opportunity for a standard and reliable approach to the clinical monitoring of voice variability in those presenting with ASD.

09:00-09:08 *Quality of Frozen Section Specimens: Comparison Between Three Methods – I. Arteau-Gauthier, N. Audet, Gauthier P, et al. QUÉBEC, PQ (originally submitted in French)*

Abstract #16

Objectives: Compare the extent of cauterization artifact in three methods of surgical resection: electrocautery, blade and Harmonic “device” on live pig tongues.

Methods: Partial glossectomy performed on 5 live pig tongues. Pathologic analysis of frozen section specimens using Moh’s technique with quantitative and qualitative evaluation of tissue present on the slides and the number of slices required to obtain a complete margin without artifact.

Results: Decreased rate of artifact with the harmonic device, but the rate remains superior to the blade. The harmonic device offers a better specimen display and decreases the number of necessary slices when compared to electrocautery but is equivalent to the blade.

Conclusion: The harmonic device could reveal itself as being a useful instrument in the control of bleeding with the blade. However, pathologic analysis, even though more precise than the cautery, reveals itself as being inferior to the blade alone.

09:08-09:16 *Safety and Efficacy of the Holmium-YAG Laser in Salivary Stone Fragmentation and Removal – A. Sharma, R. Irvine, S. Swanson, VANCOUVER, BC*

Learning Objectives

The audience will be familiar with:

1. the clinical results of the endoscopic application of the Holmium-YAG laser on salivary ductal stones;
2. the complications associated with endoscopic laser stone fragmentation;
3. the clinical indications for endoscopic salivary laser lithotripsy;
4. the safety and training protocols for laser use in our institution.

Abstract #17

Objectives: 1) review the clinical results of the endoscopic application of the Holmium-YAG laser on salivary ductal stones at St. Paul's Hospital; 2) present the complications associated with endoscopic laser stone fragmentation; 3) discuss the clinical indications for endoscopic salivary laser lithotripsy and 4) outline our institutional protocols for laser safety and certification.

Methods: Retrospective chart review of all patients since the inception of this program in July 2005 who underwent Holmium-YAG laser fragmentation of salivary stones. Data on demographics, symptoms, stone size, procedure duration, complications, stone clearance rates and clinical outcomes will be presented.

09:16-09:24 *Ultrasound Guided Fine Needle Aspiration Thyroid Biopsies in the ENT Clinic – J. Schwartz, J. Cote, O. Gologan, et al. MONTREAL, QC*

Learning Objectives

1. By the end of our presentation, the otolaryngologist will recognize the value of ultrasound guided FNAB as a clinical diagnostic tool for the evaluation of thyroid nodules resistant to adequate sampling by standard biopsy techniques.
2. By the end of our presentation, the otolaryngologist will be able to describe the expected specimen adequacy rate of thyroid nodules resistant to adequate sampling by standard biopsy techniques when biopsied under ultrasound guidance.

Abstract #18

Objective: To discuss the experience of ultrasound guided thyroid fine needle aspiration biopsies (USFNA) in the ENT clinic. Also, to evaluate the specimen adequacy rate of USFNA performed in patients whose initial biopsy provided inadequate cellular material for evaluation.

Materials and Methods: A retrospective analysis of 65 patients followed for thyroid nodules. All USFNAs were performed by an otolaryngologist on patients with previous inadequate thyroid biopsies. Materials included a Mylab25 Biosound Esoate US and 1 pass with a 10 cc, 20 gauge, 1 ½” needle. Specimens were preserved in a 50 cc tube containing 15 cc of thin prep cytolyt solution prior to cytopathological evaluation.

Results: Sixty-five patients underwent 76 USFNAs. The sample included 57 females and 9 males (mean age = 51.1 and 55.4 respectively). The specimen adequacy rate was 90.8% (69/76). Among the adequate specimens, 2 were malignant (2.6%), 6 were suspicious for malignancy (7.9%), 43 were benign (56.6%), and 18 were indeterminate (23.7%). The mean time for USFNA was 28s.

Conclusion: Our experience demonstrates that USFNA performed in clinic by an otolaryngologist represents a promising tool for improving specimen adequacy of nodules resistant to adequate sampling by standard biopsy techniques without the need for radiological consultation.

09:30-09:38 *Geriatric Patient Safety: Patient Safety Goals Are Not Enough* – A. Chalian, S. Kagan, PHILADELPHIA, PA

Learning Objectives

1. The participant will be able to discuss two features of the current literature in Geriatric Patient Safety
2. The participant will be able to define the gaps in the geriatric patient safety literature
3. The participant will be able to analyze the relevance of national patient safety goals for geriatric patient safety programming.
4. The patient will be able to define the relevance root cause analyses

Abstract #19

Objective: Frame the challenges and opportunities to provide safe healthcare for geriatric patients. Frail older adults and their health concerns, combined with declining functional reserve, represent the perfect storm threatening patient safety with the tension of unique elder concerns juxtaposed against systematic organizational initiatives to address common risks among populations of “typical” patients.

Method: Integrative literature review, clinical case study, and root cause analysis are the tools used to model the unique needs of elder patients in assuring their safety within the healthcare system.

Results: The results of comprehensive integrative literature review show a focus on geriatric syndromes to the exclusion of the analysis of systems and process impact on geriatric patient safety. Specific near miss and actual sentinel events are analyzed to explore failure and success modes in patient care structures and processes. Our analysis illustrates the manner in which patient safety for older adults differs from that experienced by younger patients.

Conclusion: Organizational directives must be carefully developed integrating comorbid disease, geriatric syndromes and international/national patient safety goals to protect these vulnerable patients.

09:38-09:46 *Interest and Barriers to Participation in Global Health Initiatives by Canadian Otolaryngology Residents* – H. Javidnia, L. McLean, OTTAWA, ON

Learning Objectives

By the end of this presentation the audience will:

1. Know the level of interest amongst Canadian otolaryngology residents in Global Health and International Health Electives.
2. Understand the most significant barriers experienced by Canadian Otolaryngology residents while pursuing their interest in Global Health.
3. Appreciate the need to develop infrastructure to facilitate participation in Global Health.

Abstract #20

Objective: To determine the level of interest amongst Canadian Otolaryngology residents in Global Health Initiatives (GHI) and International Health Electives (IHE) along with barriers to participation in such initiatives.

Methods: A web-based survey was developed and sent to all Canadian Otolaryngology residents. Questions were posed on demographics, level of interest in GHI/IHE, past experiences in this field, real and perceived barriers in pursuing GHI/IHE, previous global health experience, and finally, the current infrastructure that exists in Canadian post-secondary institutions and Otolaryngology programs to encourage participation.

Results: There is a high level of interest among Canadian Otolaryngology residents in GHI/IHE. The greatest barriers to pursuing this interest are cost, lack of infrastructure, lack of mentors and lack of elective time.

Conclusion: We must devise means of overcoming barriers to participation in GHI/IHE and facilitate the clear and substantial resident interest in GHI/IHE. By supporting these endeavours, we will expose a cross section of physicians to global issues and give them an important and meaningful context in our increasingly interconnected world. Furthermore, studies have shown many positive effects of participation in GHI/IHE on residency training and future career paths of residents. These compelling benefits necessitate development of infrastructure to support such initiatives.

09:46-09:54 *What is Happening in a Surgeon’s Head?* – B. Guay, D. Dorion, M. Martin, SHERBROOKE, PQ

Abstract #21

Introduction: Surgery is a complex art which requires good knowledge, judgment, self control and a certain level of manual dexterity. Three-dimensional perception, that capacity to mentally represent objects in three dimensions, seems intuitively essential to attain perfection in the surgical art.

Objectives: Determine the influence of three-dimensional perception on surgical dexterity.

Methods: We evaluated three-dimensional perception of surgeons by submitting them to standardized tests of mental rotation.

Results: The surgeons studied have a three-dimensional perception comparable to our control group. However, surgeons identified by our residents as having a superior manual dexterity distinguished themselves from the control group and the other surgeons.

Conclusion: We conclude that three dimensional perception is one of the important factors determining a surgeon’s manual dexterity. This variable could help in the selection of residents, their training and their career counseling.

**MONDAY, MAY 11, 2009 - MORNING
HALIFAX A BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: EDUCATION AND RESEARCH

Chair: Dr. Karen Kost, Montreal, QC

10:30-10:38 *Introduction of a Novel Teaching Paradigm for Head and Neck Anatomy* – **K. Chen**, J. Glicksman, P. Haase, et al. LONDON, ON

Learning Objectives

By the end of this session the audience will be able to describe the implementation of the proposed paradigm for teaching head and neck anatomy in the undergraduate medical curriculum.

By the end of this session the audience will be able to consider which teaching paradigm is more effective in the instruction of head and neck anatomy at the Schulich School of Medicine and Dentistry.

By the end of this session the audience will be able to describe the components of the multimodal and multidisciplinary encompassed in the proposed paradigm.

Abstract #22

Didactic head and neck anatomy teaching has been replaced by a novel multimedia, self-directed, case-based, multimodal and multidisciplinary approach at Western.

Objectives: To describe the implementation of the proposed paradigm for teaching head and neck anatomy in the undergraduate medical curriculum.

Design: Prospective cohort study with historical controls.

Methods: The paradigm consists of self-directed, web-based, multimedia learning modules guiding independent anatomy learning. Students will receive a case-based assignment based on the content of the learning modules to guide through required cadaveric dissections facilitated by a multidisciplinary team of surgeons and anatomists.

Primary Outcome: Post-course survey. Secondary Outcome: Efficacy study.

Scores from a post-test will be compared to historical data from a previous class that was taught with standard teaching methods (didactic lecture + separate anatomy lab) and identical time allotment.

Summary: Student feedback and test results will be discussed. This new teaching methodology has important implications in 21st century undergraduate medical curricula, especially in light of decreasing lecture time, increasing challenges obtaining cadaveric material, the increasing role of distance education, and increasing emphasis on integration, team teaching, and self directed learning.

10:38-10:46 *Clinical Computer-Assisted Learning in Otolaryngology: The Western Experience* – **J. Glicksman**, K. Fung, LONDON, ON

Learning Objectives

1. The limited focus on Otolaryngology in the undergraduate medical curriculum will be described.
2. The use of computer-assisted learning at the Schulich School of Medicine and Dentistry will be described.
3. Attendees will appreciate how these and similar CAL modules may benefit medical students at other academic institutions.

Abstract #23

Introduction: Both classroom and clinical instruction time at the Schulich School of Medicine and Dentistry (SSMD) and other medical schools have recently been reduced. Computer-Assisted Learning (CAL) modules may be an effective method of augmenting teaching in medical school curricula.

Objectives: To describe the use of CAL modules in the instruction of medical students at SSMD.

Design: Retrospective Review

Methods: Otolaryngology CAL modules utilized in the SSMD undergraduate medical curriculum will be described. The efficacy of many of these modules has been determined through student surveys and prospective randomized control trials.

Results: Thirteen online CAL Modules have been designed since 2006. Six are designed to teach pre-clerkship students, and seven are used for clerkship students rotating through Otolaryngology. Ten modules are case-based and two are skill-based. At our institution, two prospective studies among pre-clerkship students and one among family medicine residents have demonstrated that students learn both knowledge and skills effectively with these modules and enjoy using them.

Discussion: The CAL modules used at SSMD are effective methods of instructing medical trainees and have been successfully used to augment the otolaryngology curriculum at SSMD. These and future modules would likely be of benefit

to students at other institutions.

10:46-10:54 *E-Learning and ENT: Where Do We Go Now?* – A. Knox, D. Kozan, B. Barber, et al. EDMONTON, AB

Learning Objectives

By the end of this session the listener will be able to:

1. Identify electronic delivery methods perceived by students to be the most useful and use these modalities during instruction of ENT material as a supplement to clinical exposure.
2. Appreciate the importance of peer review processes in ensuring quality and validity of new forms of increasingly used e-learning tools.
3. Appreciate the diversity between student and instructor perceptions towards effectiveness of available e-learning modalities when deciding how to best teach a particular subject or skill.
4. Compare and contrast student and instructor perceptions regarding advantages and disadvantages of e-learning to ensure the needs of both parties are met when deciding on an optimal medium of instruction.

Abstract #24

Objectives: Studies have demonstrated that ENT is under-represented in Canadian medical school curricula. Computer assisted instruction (e-learning) is a contemporary educational approach that may play an important role in undergraduate medical education. There is little consensus on which e-learning methods are most effective. Our study aims to find modalities perceived to be most useful and identify lesser known methods.

Methods: All Canadian medical students and academic Otolaryngologists were invited to complete a twenty-eight item electronic survey with a five point Likert scale. Qualitative comments about e-learning were collected.

Results: According to the 369 student and 49 Otolaryngologist respondents, pictures and videos are the most useful. Students frequently use Wikis and question banks. Discussion forums and learning games are less useful. Participants strongly prefer peer-reviewed resources. E-learning is not helpful with histories and physical exams. Otolaryngologists feel the current amount of e-learning is inadequate. YouTube is the most commonly identified ancillary resource.

Conclusions: We recommend redistributing knowledge into delivery methods preferred by students, namely pictures, videos and quizzes. As wiki-type internet resources become more abundant and variable in quality, peer-review processes must be developed to ensure validity. E-learning in otolaryngology is deserving of further development in undergraduate medical curricular planning.

11:00-11:08 *Mail-out Survey-driven Studies in Head and Neck Patients and Surgeons: An Example of Maximizing Survey Return Rates* – A. Eskander, D. Goldstein, TORONTO, ON

Learning Objectives

By the end of this presentation, CSO members and guests, will:

1. have a better understanding of the mechanisms used by researchers to maximize response rates using mail-out survey-driven studies for both patients and surgeons;
2. be able to describe 5-10 effective techniques which can be used when designing any mail-out study and will be able to incorporate these techniques into their current research projects and initiatives.
3. Understand possible reasons for the differences in response rates between two survey-driven studies which will have been compared.

Abstract #25

Mail-out survey-driven studies are becoming more prevalent in the head and neck literature. Unfortunately, a poor response rate can lead to high non-response bias leading to results that may not be generalizable. There have not been reports in the head and neck literature regarding maximizing survey response rates. Here we summarize the findings and recommendations surrounding mail-out survey-driven studies. Additionally, we compare two populations that were studied using similar survey-driven study methodology, designed to produce maximum response rates. The first study investigates head and neck cancer patients and surgeons. The methods used yielded a response rate of 80% with the patient population and 67% for the Canadian surgeon population. The second study investigated patients that were on a thyroid surgery wait-list and yielded a response rate of only 55%. Possible reasons for this observed difference in response will be discussed.

11:08-11:16 *Trends in Quality of Evidence of Publications in Facial Plastic Surgery* – C. Xu, D. Cote, R. Chowdhury, et al. EDMONTON, AB

Learning Objectives

By the end of this session, the audience will be able to describe trends in the quality of clinical research and levels of evidence in facial plastic and reconstructive surgery literature over the last 15 years.

Abstract #26

Objective: Increasingly, there is an expectation to produce quality research to guide evidence-based practices. However, the quantity and quality of evidence-based literature in the subspecialty of facial plastic surgery is often criticized. The objective is to identify trends in the quality of clinical research and levels of evidence in facial plastics literature over the last 15 years.

Methods: All original facial plastic and reconstructive surgery articles published in 1993, 2000, and 2007 in Archives of Facial Plastic Surgery, Journal of Plastics and Reconstructive Aesthetic Surgery, Facial Plastic Surgery, Laryngoscope and Otolaryngology-Head and Neck Surgery were reviewed. All research articles (clinical trials, laboratory studies, animal studies, case series, surveys and case reports) and review papers during the specified publication periods were reviewed and graded based on the Oxford Centre for Evidence-based Medicine Levels of Evidence by three separate reviewers.

Results: There was a statistically significant increase in the proportion of higher evidence research published in the facial plastics and reconstructive literature. However, Level I evidence remains a rarity.

Conclusions: While there is an increasing trend in recent years for higher quality published research in the facial plastics and reconstructive surgery literature, Level I and II evidence remains in the minority.

11:20-11:28 ***Advanced Airway Management Teaching in Otolaryngology Residency: A Survey of Residents Across Canada***
– V. Cote, L. Nguyen, K. Richardson, MONTREAL, PQ

Learning Objectives

By the end of the presentation the resident and the attending staff in otolaryngology will be able to describe the status of teaching on advanced airway management across Canada.

Abstract #27

Objectives: To assess the level of comfort of residents with advanced airway management in otolaryngology programs across Canada.

Methods: An electronic survey was sent to all otolaryngology residents in Canada. Responses were voluntary and anonymous. Residents were asked about their level of comfort and the amount of teaching they are receiving and would like to receive every year for the following clinical scenarios: emergency surgical airway, pediatric airway, airway trauma and management of complications during laryngoscopy/bronchoscopy.

Results: Response rate was 64.8% (94 of 145 residents). Residents felt most comfortable with emergency surgical airway, which correlated with the highest amount of teaching time received. Comfort level for other components of advanced airway management considerably lowered with less teaching time received. Airway trauma teaching was given on average 4.5 hours/year and residents felt this could be increased 4-fold.

Conclusions: Overall, Canadian otolaryngology residents do not feel comfortable with advanced airway management and feel that a significant increase in teaching time could be beneficial.

11:28-11:36 ***Improvement of Diagnostic Accuracy with Pneumatic Video-otoscopy Teaching: A Randomized Control Trial***
– T. Al-Khatib, L. Nguyen, MONTREAL, PQ

Abstract #28

Background: Otitis media is the second most common diagnosis in children, a diagnosis for which educational approaches are suboptimal. The diagnostic accuracy has been shown to be poor amongst physicians. The detection of middle ear fluid (MEE) is pivotal in the diagnosis of otitis media.

Objective: To determine if pneumatic video-oto-endoscopic examination (VOE) improves the diagnostic accuracy of otitis media.

Study Design: A randomized control trial.

Methods: Pediatric residents were randomized into pneumatic examination group (intervention) and still examination group (control). Each group viewed a set of 25 VOE of the tympanic membrane (normal and MEE ears). The intervention group viewed the same still images as the control group but with the addition of pneumatic (mobile) presentation. Each candidate documented his/her diagnosis as normal or MEE. We compared the accuracy of assessment for both the static and the pneumatic tests.

Results: 22 pediatric residents participated (15-intervention group, 7 controls). The overall diagnostic accuracy was 91% for the pneumatic group vs. 78.4% for the control group.

Conclusion: Pneumatic otoscopy teaching improved the diagnostic accuracy in detecting the presence and absence of middle ear fluid.

11:36-11:44 ***Covering Non-perceived Needs of Education in Pediatric Otolaryngology*** – H. El-Hakim, EDMONTON, AB

Learning Objectives

At the conclusion the audience would:

1. consider a method for directed learning;
2. identify particular pediatric subspecialties to interact with in context of training;
3. gain some information on designing curricula.

Abstract #29

Objectives: The content of core curricula for education and training is based usually on expert opinion. Subspecialty training interfaces constantly with other disciplines. This implies the emergence of needs that may not be catered for within core curricula.

Aim: Identifying the commoner non-otolaryngological diagnoses encountered by (Ped-ORL)

Method: Exploratory review of a database containing the surgical case-load of one tertiary care Ped-ORL practice. Up to four diagnoses are documented prospectively per patient. All the non-otolaryngology diagnoses were identified over a 5-year period, and classified by specialty. Conditions that only occurred once or twice were excluded such that commoner problems are identified, along with their specialties.

Results: The database contains information on 3016 children. Despite the colorful spectrum of non-otolaryngological diagnoses, pulmonary, gastro-enterological and cardiac conditions predominated (in addition to obesity). There are particularly top ten diagnoses that seem to reappear frequently. Additionally, eight syndromes / associations seemed to re-appear time and again.

Conclusion: Training in pediatric otolaryngology should include pulmonologists, gastro-enterologists, and cardiologists. Journal clubs, core lectures, and research should target the diagnoses most commonly encountered.

11:44-11:52 ***Facial Plastic Surgery Experience in Otolaryngology Residency: A Survey of Chief Residents*** – S. Walen, L. Rudmik, M. Klein, CALGARY, AB

Learning Objectives

By the end of this presentation, the audience will learn about the importance of facial plastic surgery education for American and Canadian board exams, the history of facial plastic surgery as a branch of otolaryngology and will learn about factors that may contribute to chief resident satisfaction with facial plastic surgery education.

Abstract #30

Objectives: The development of facial plastic surgery (FPS) as a subspecialty of otolaryngology is based on advances in clinical, surgical and research aspects of this field. The presence and quality of FPS in North American otolaryngologic residency programs has not been studied in the literature.

Methods: An anonymous, web-based survey of chief residents in otolaryngology residency programs throughout North America. Respondents described their educational experience in facial plastic surgery in three areas: didactic teaching, surgical teaching and research. The 5-point Likert scale was used throughout the survey to assess satisfaction with their FPS educational experience with higher scores representing favorable responses.

Results: The survey was successfully completed by 83 respondents with 85% of Canadian programs and 51% of American programs represented. Overall, 65% of respondents reported that they were satisfied with the FPS experience in residency. Factors that improved the satisfaction with the FPS experience included: number of FPS trained faculty, presence of FPS faculty on the residency training committee and presence of a fellowship program.

Conclusions: The residency experience in facial plastic surgery is variable and depends on numerous factors including country (U.S. or Canada), staff participation in residency administration and presence of a fellowship program.

MONDAY, MAY 11, 2009 - AFTERNOON HALIFAX A BALLROOM MARRIOTT HARBOURFRONT HOTEL

POLIQUIN RESIDENTS COMPETITION

Chair: Dr. E. Massoud, Awards Chair

13:00-13:12 ***Introduction and Outline of the Competition*** - Awards Chair, E. Massoud, HALIFAX, NS

13:12-13:24 ***A Double-blind Placebo Controlled Trial Assessing the Efficacy of Mouthwash in Reducing the Negative Flavour of Oral Lidocaine*** – J. P. Bonaparte, M. Corsten, R. Rourke, UNIVERSITY OF OTTAWA, OTTAWA, ON

Abstract #31

Objectives: To test the hypothesis that using a mouthwash rinse will reduce the negative taste associated with lidocaine.

Methods. 15 healthy, non-smoking subjects attended two testing sessions in which they received either alcohol based mouthwash or placebo prior to a standardized administration of oral lidocaine. Using a visual-analogue scale (VAS), subjects graded the taste from 0 (most unpleasant) to 100 (most pleasant) with 50 defined as neutral. Subjective analgesia was also assessed (VAS of 0 to 100). A Wilcoxon Signed-Rank test was used to compare outcomes.

Results. The VAS for taste was 50.2 (SD 12.84) for the mouthwash group and 20.77 (SD 13.2) for the control group (p=0.007). Subjective assessment of analgesia was 60.9 (SD 25.2) for the mouthwash group and 74.9 (SD 22.26) for the control group (p=0.03).

Conclusions: Administration of mouthwash prior to oral lidocaine application significantly reduced the negative taste associated with lidocaine. Although there was a reduction in subjective analgesia with the mouthwash group, it is unclear if

this is clinically significant.

13:24-13:36 *A Pooling-based Genome-wide Association Study Implicates the p73 Gene in Chronic Rhinosinusitis* – A. S. Tournas, L. Mfuna-Endam, Y. Bossé, A. Filali-Mouhim, J.P. Grenier, M. Desrosiers, UNIVERSITÉ DE SHERBROOKE, SHERBROOKE, QC

Abstract #32

Background: A pooling-based genome-wide association study (pGWAS) performed on an existing population with refractory chronic rhinosinusitis (CRS) identified the p73 gene as a high-priority target. P73 is biologically plausible as p73 knockout mice develop severe CRS.

Objective: To investigate the association between p73 and CRS and identify causal mutations.

Methods: Genotyping of two SNPs in the p73 gene was performed in 206 patients with CRS and 196 controls. Results were analyzed using PLINK software. Sequencing of p73 was performed in 11 individuals to identify mutations.

Results: For SNP rs3765731, a significant difference in minor allele frequency (MAF) between case and controls was noted. (MAF: 0.27; 0.36, $p=0.008$, odds ratio (OR)=0.65). Strength of association was greatest for severe disease (0.17; 0.36, $p=0.00005$, OR=0.37). Sequencing did not reveal any mutations.

Conclusion: We identify for the first time an association of the p73 gene and severe CRS. Identification of mechanisms involved, and diagnostic/therapeutic applications remain to be elaborated.

13:36-13:48 *Does STS Delay Presbycusis?* – T. Quddusi, B.W. Blakley, UNIVERSITY OF MANITOBA, WINNIPEG, MB

Abstract #33

Introduction: Presbycusis is one of the most common disabilities faced as we age. It may be that antioxidant therapy delivered for a significant duration, long before the development of presbycusis will prevent it in later life. We decided to test this in a mouse model using an antioxidant regimen using sodium thiosulfate (STS) that has proven to prevent hearing loss in ototoxicity studies. Auditory brainstem testing was carried out at approximately monthly intervals for a year using clicks and/or tone pips at 6000, 8000, 12000 and 24000 Hz in each ear of 16 animals. The animals were randomized to receive either saline or sodium thiosulfate 1600 mg/kg i.p. Each ear was entered separately ($n=32$) with the threshold data. Treatment was statistically significantly better in animals treated with STS than with saline. Across all frequencies the overall (n), mean \pm s.d. for STS was (154) 30 \pm 35 and for saline (206) 48 \pm 33.

Conclusions: STS administration may prevent presbycusis in C57 mice. Future studies addressing presbycusis prevention with STS in human subjects are required.

NOTE: We reserve the right to include more animals for the final paper as more data will become available after December, 2008.

13:48-14:00 *Treatment of Patulous Eustachian Tube Using Mass Loading of the Eardrum* – C. Bartlett, R. Pennings, D. Kirkpatrick, M. Bance, DALHOUSIE UNIVERSITY, HALIFAX, NS

Abstract #34

Objectives: Patulous eustachian tube has a major impact on a patient's quality of life. The purpose of this study was to create a questionnaire to help further define the symptoms of patulous eustachian tube, and to use this tool to explore a method of relieving PET symptoms using mass loading of the eardrum, in addition to defining the vibration changes in the eardrum using this treatment.

Materials/Methods: A questionnaire was developed and administered to patients with PET, resulting in a PET score, which was used to measure the results of PET treatment with mass loading of the eardrum using steristrips or a putty like clay. In a second arm, the vibration characteristics of the eardrum were measured in 6 fresh temporal bones, using the same clinical treatments. We also measured the impact of lasering the eardrum with a CO2 laser, which has also been used by us as a clinical tool.

Results/Conclusion: Treatment with steristrip and blue tack decreased the symptoms of eustachian tube dysfunction in most patients, but not all. The impact on eardrum vibrations seems to be a lowering of the low frequency responses. This has led to a theory that most PET symptoms arise from the low frequency aspects of transmitted voice, and that if these can be managed, the symptoms can be substantially managed.

14:00-14:12 *Radial Forearm versus Anterolateral Thigh Free Flaps for Laryngopharyngectomy Defects: A Prospective, Randomized Trial* – A. T. Morrissey, D. A O'Connell, S. Garg, H. Seikaly, J. Harris, UNIVERSITY OF ALBERTA, EDMONTON, AB

Abstract #35

Objective: To investigate the use of anterolateral thigh flaps versus radial forearm free-flaps for the reconstruction of laryngopharyngectomy defects in a prospective, randomized study.

Methods: Nineteen patients who were to undergo laryngopharyngectomy were randomized into either anterolateral thigh or radial forearm groups. The primary outcome measure was complication rate (flap failure, fistula formation, pharyngeal stenosis, etc.). Secondary outcome measures included donor site morbidity (limb function, cosmesis, pain).

Results: There was a significant ($p=0.04$) increase in reconstructive complications in the anterolateral thigh group, including esophageal stenosis and pharyngeal fistulae. There was no significant difference in donor site morbidity.

Conclusion: There is an increased free-flap complication rate without decreased flap donor site morbidity when using the anterolateral thigh flap to reconstruct laryngopharyngectomy defects. As such, we recommend the radial forearm free flap as the preferred flap for reconstruction of laryngopharyngectomy defects.

14:12-14:24 *From Fragments to the Whole: A Comparison Between Cochlear Implant Users and Normal Hearing Listeners in Music Perception and Enjoyment* – **A.J. Alexander**, L. Friesen, L. Bartel, D.B. Shipp, J. Chen, UNIVERSITY OF TORONTO, TORONTO, ON

Abstract #36

Background: Cochlear implants (CIs) allow many profoundly deaf individuals to regain speech understanding. However, the ability to understand speech does not necessarily guarantee music enjoyment. Enabling a CI user to recover the ability to perceive and enjoy the complexity of music remains a challenge determined by many factors.

Objectives: Music perception and enjoyment were measured using a novel, attention-based, diagnostic software program (“Music EAR”). It was administered to three listener groups: 1) CI listeners; 2) normal hearing musicians (NHM); 3) normal hearing non-musicians (NHnM).

Methods: Thirty-two subjects (CI=12, NHM=10, NHnM=10) completed the “Music EAR”. Subjects were required to: 1) rate enjoyment of musical excerpts in three complexity levels; 2) differentiate five instrumental timbres; 3) recognize pitch pattern variation 4) identify target musical patterns embedded holistically in a melody.

Results: CI users showed remarkable performance in pitch and timbre recognition tasks, with scores comparable to the other two groups. However, as attention and music processing demands increased, CI users scored significantly lower.

Conclusions: CI users’ performance with simple pitch and timbre tasks suggests that they have been able to recover some music processing ability. Together with auditory training evidence, the results provide considerable hope for further recovery of music appreciation through methodical rehabilitation.

14:24-14:36 *Development and Validity Testing of a Three Dimensional Myringotomy Simulator with Haptic Feedback* – **L.J. Sowerby**, G. Rehal, M. Husein, S. Agrawal, H.M. Ladak, UNIVERSITY OF WESTERN ONTARIO, LONDON, ON

Abstract #37

Introduction: A great deal of progress has been made with the development of three dimensional (3D) temporal bone virtual reality simulators. Very little attention has been paid to the development of three dimensional middle ear surgery models, including myringotomy simulators. Developing surgical prowess in middle ear surgery involves a relatively steep learning curve with the inherent risks to patients. The benefit of a model to aid in the acquisition of these skills has been demonstrated with previous “real” models. Tactile sensation is a very important part of middle ear surgery and, with this in mind, a three dimensional virtual reality myringotomy simulator with haptic feedback was developed.

Objective: To examine the face validity of a 3D myringotomy simulator with haptic feedback.

Methods: The 3D myringotomy simulator was calibrated with input from two otolaryngologists and one intermediate resident. The face validity of the resulting simulator was tested among teaching staff otolaryngologists and intermediate/senior residents using a previously tested questionnaire.

Results: Preliminary results suggest a good face validity for the myringotomy simulator with haptic feedback.

Conclusions: The initial results from the development and testing of a 3D virtual myringotomy simulator with haptic feedback are encouraging. This simulator is the first of its kind and could be of benefit in the future training of proficient middle ear surgeons.

14:36-14:48 *Molecular Characterisation of the Polymicrobial Flora in Chronic Rhinosinusitis* – **M.F. Stephenson**, L. Mfunu, J. Barbeau, S. Dowd, A. Wolcott, G. James, M. Desrosiers, UNIVERSITÉ DE MONTRÉAL, MONTRÉAL, QC

Abstract #38

Introduction: Conventional cultures have implicated staphylococcus Aureus (SA) and coagulase-negative staphylococcus (CNS) as principal pathogens in CRS. These results are questioned by recent studies of biofilms where molecular probes implicate Haemophilus Influenzae instead.

Objectives: Identify all bacterial species present on sinonasal mucosa using molecular culture (MC) and compare with conventional methods.

Methods: Prospective study of 18 patients undergoing endoscopic sinus surgery for chronic rhinosinusitis (CRS). Per-operative mucosal biopsies were assessed with MC by sequencing the species-specific 16-S RNA fragment for genetic identification of bacteria, and then compared with simultaneous swab culture.

Results: Standard cultures showed mainly SA and CNS. Molecular cultures identified up to 20 organisms per sample. Surprisingly, anaerobic species predominated (diaphorobacter and petidophilus). SA was nevertheless detected in 50%.

Conclusion: Molecular cultures are sensitive tools for bacterial identification in CRS and suggest that anaerobe involvement may be more frequent than presumed. Implications of these findings underline the need for further investigation.

14:48-15:00 ***Maxillary Wall Bone Grafts for Traumatic Orbital Floor Defects*** – S. Morong, M. Elahi, UNIVERSITY OF TORONTO, TORONTO, ON

Abstract #39

Objective: To present maxillary bone grafts as a viable option when choosing material to repair traumatic orbital floor defects.

Methods: The author's preferred surgical technique of harvesting maxillary antrum bone grafts for traumatic orbital floor defects is described. Patients undergoing orbital floor fracture repair using maxillary bone grafts are assessed retrospectively, focusing on size of orbital floor defect, operative time, and follow up results.

Results: Eighty four patients presented with a traumatic orbital floor defect to a single surgeon between 2004-2007. Thirty five of these patients had their defects repaired with maxillary bone grafts. Mean orbital floor defect size was 1.3 cm²; range 0.32 – 2.82 cm². There were no complications (post – op diplopia, infraorbital numbness, enophthalmos or donor site morbidity) noted. Mean operative time in patients with isolated orbital floor defects repaired with maxillary bone grafts was 31 minutes.

Conclusions: Maxillary bone grafts should be considered a viable option when choosing material to repair a traumatic orbital floor defect. In this series, maxillary bone grafts were used successfully to repair small to medium sized orbital floor defects, with no increased risk of complications and no significantly increased OR time when compared to other documented methods for orbital floor repair.

15:24-15:36 ***Floseal Hemostatic Matrix in Persistent Epistaxis: A Prospective Clinical Trial*** – D.W.J. Côté, B.R. Barber, R.C. Diamond, E.D. Wright, UNIVERSITY OF ALBERTA, EDMONTON, AB

Abstract #40

Objectives: While most cases of epistaxis are managed conservatively, occasionally they can progress to significant hemorrhage requiring more involved management or surgery. Endoscopic ligation surgery is the current institutional standard of care for patients who fail conservative management. However, surgical ligation requires availability of surgical resources and patients who are able withstand an anaesthetic. This study's objective was to determine the efficacy of Floseal hemostatic matrix in epistaxis refractory to nasal packing.

Methods: A prospective clinical trial was conducted on epistaxis patients whose nasal hemorrhage persisted despite adequate nasal packing by the Otolaryngology team. Once enrolled, patients are given a trial of intranasal Floseal hemostatic matrix to abort the epistaxis. Should this fail, patients then proceed with surgical clipping.

Results: Preliminary data analysis reveals significant success in preventing the need for surgical intervention in patients with persistent epistaxis. The majority of enrolled patients with persistent nasal hemorrhage were adequately managed with the hemostatic matrix alone.

Conclusions: This study reveals a highly effective tool in the Otolaryngologist's management of persistent epistaxis. Given the ease of use, decreased morbidity to the patient, and cost-effectiveness, Floseal hemostatic matrix could change clinical practice in managing this common condition.

15:36-15:48 ***Does Intracochlear Brain-derived Nerve Growth Factor Improve Auditory Brainstem Click Thresholds in Sensorineural Hearing Loss?*** – E. Meen, B.W. Blakley, UNIVERSITY OF MANITOBA, WINNIPEG

Abstract #41

Objective: To determine whether intracochlear administration of BDNF improves ABR click thresholds in established sensorineural hearing loss.

Methods: Hearing loss was created using high doses of cisplatin (CDDP) in eleven guinea pigs. One month later, bilateral cochleostomies were then performed. In one ear 0.5 ug BDNF was injected and in the other an equivalent volume of saline was injected prior to plugging with fat. Auditory brainstem response (ABR) testing was then carried out for three months using clicks to determine threshold.

Results: The difference in auditory thresholds were not statistically significant between the two ears at three months (p=0.277) or across the months (p=0.353). Unfortunately, twenty percent of the tests indicated no hearing at all, equally distributed across BDNF and non-BDNF ears.

Discussion: Our data do not suggest that BDNF improves hearing loss. The severity of hearing loss was a significant confounding variable - it is possible that the combination of CDDP and surgical trauma resulted in excessive hearing loss that was too large for the BDNF to overcome.

Conclusion: Our data do not support the use of intracochlear BDNF for profound hearing loss correction.

NOTE: We reserve the right to change our results based on new data for the final paper.

15:48-16:00 ***The “Double Fat Plane” of the Radial Forearm Free Flap and Its Implications for the Micro-vascular Surgeon*** – **A. Shahnava**, R. Hart, E. Henry, J. Trites, M. Taylor, DALHOUSIE UNIVERSITY, HALIFAX, NS

Abstract #42

Objective: The radial forearm free flap (RFFF) is the workhorse in reconstruction of head and neck defects. The superficial cephalic vein is included in this dissection due to its larger diameter; however, this vein often has a variable course in the subcutaneous tissues. We have routinely isolated the cephalic vein within a reliable double fat plane, which has previously not been described. This study demonstrates the constancy of the cephalic vein within this double fat plane using a cadaveric model as well as our prospective operative experience raising RFFF.

Method: 4 lightly preserved cadavers and 1 fresh cadaver were dissected by elevating a RFFF, identifying the double fat plane and isolating within this plane the cephalic vein. Between August 2006-Apr 2008, we prospectively recorded the anatomic location of the cephalic vein in 35 patients that had RFFF surgery.

Results: The double fat plane and cephalic vein were identified in all cadaveric dissections. The double fat plane was identified and lead to the injury free dissection of the cephalic vein in all 35 patients.

Discussion: To our knowledge, this is the first report of the presence of the double fat plane within the subcutaneous fascia of the radial forearm and its use as a consistent landmark in finding the cephalic vein. Our cadaveric studies and operative observations have demonstrated that the double fat plane is a reliable, consistent and helpful guide for the isolation of the cephalic vein in RFFF surgery.

16:00-16:12 ***Oral Cavity Cut-Through: The Impact of Intraoperative Frozen Section on Oncologic Prognosis*** – **J.P. Guillemaud**, R.S. Patel, D. Goldstein, K.M. Higgins, D. Enepekides, UNIVERSITY OF TORONTO, TORONTO, ON

Abstract #43

Objectives: While the literature suggests that a positive tumour margin on permanent section portends poor oncological outcome, the prognostic implication of tumour cut-through, i.e. positive tumour margin on intra-operative frozen section, that is revised to a negative ultimate margin is currently unclear.

Methods: 5-year retrospective analysis of oral cavity clinicopathological databases at the Odette Cancer Centre, Sunnybrook Hospital, Toronto, Canada. The Cox proportional hazard model is used to identify independent factors predictive of local control and disease-specific survival.

Results: 157 patients treated at the Sunnybrook site met inclusion criteria for our study (92 males, mean 63.5years). Three study groups were formed based on intraoperative frozen and final tumour margin results. Using the Kaplan-Meier method and univariate comparisons with the log rank test, both disease-free and overall survival were significantly reduced in patients with positive intraoperative frozen section (30.5% and 67% respectively) despite revision to obtain negative margins, as versus patients with both negative intraoperative frozen and final sections (64.5% and 81%).

Conclusions: This is the first study to investigate the prognostic implication of tumour cut-through during surgery, and would suggest that a positive intra-operative frozen section portends poor oncologic prognosis, regardless of ultimate tumour margin pathology, and may alter postoperative treatment planning.

16:12-16:24 ***Resident Satisfaction in Canadian Otolaryngology Programs*** – **T. Tuong-Vi Vu**, L. HP Nguyen, MCGILL UNIVERSITY, MONTREAL, QC

Abstract #44

Objective: To describe resident satisfaction in Canadian otolaryngology programs.

Design: Electronic survey of 21 items scored on a 5-point Likert scale.

Setting: All Canadian otolaryngology residents between February and April 2008. Responses were anonymous and on a voluntary basis.

Methods: Descriptive analysis of demographics, operative and learning experience, work environment, career planning and overall satisfaction. Overall score was compared between sex with t-test. Linear regression model was used to predict the burn out score.

Main outcome measures: item scores and overall score.

Results: 92 residents out of 140 responded (66%), including 23 female residents. Residents were satisfied with their operative and learning experiences. Dissatisfaction was found with feedback, research support, career network and balance in life. Burn out prevalence was 33% with statistically significant higher rates in English universities. No difference was identified between sex.

Conclusion: Overall, Canadian otolaryngology residents are very satisfied despite one-third having experienced burn out.

16:24-16:36 *Evaluation of a Three Dimensional Educational Computer Model of the Larynx* – A. Hu, T. Wilson, H. Ladak, P. Haase, P. Doyle, K. Fung, UNIVERSITY OF WESTERN ONTARIO, LONDON, ON

Abstract #45

Objectives: To introduce and evaluate a novel method of teaching laryngeal anatomy.

Methods: Computer Model Development - A 3-dimensional educational computer model of the larynx was created using segmentation software called Amira 4.1 from high resolution CT and MRI images of cadaveric necks. Articulate was then used to make the model interactive and multimedia. It was launched on a web-based platform.

Model Evaluation: The primary outcome measure was efficacy; a prospective randomized controlled trial was conducted comparing test scores from the 3D Computer Model group versus the Standard written instruction group; the secondary outcome measure was a student opinion survey.

Results: Student test scores were similar between groups, but a majority indicated the 3-D model was effective, clear, user-friendly, and a valuable supplement that enhanced traditional methods.

Conclusions: 3-D computer models are valuable for teaching laryngeal anatomy.

16:36-16:48 *Central Neck Node Size as a Predictor of Malignancy in Papillary Thyroid Cancer* – K. Macdonald, S.M. Taylor, M. Bullock, J. Trites, J. Nasser, R.D. Hart, DALHOUSIE UNIVERSITY, HALIFAX, NS

Abstract #46

Objectives: To determine the accuracy of lymph node size (<1cm or >1cm) as a maker of the presence or absence of malignancy in level VI neck dissection in papillary thyroid cancer (PTC).

Methods: Retrospective review of all patients who had thyroid surgery and central neck dissection for papillary thyroid cancer from June 2005, to July 2008. Number of lymph nodes present, nodal size and malignancy status was recorded.

Results: 52 patients had central neck dissection for papillary thyroid cancer, with a total of 254 nodes. Nodes ≥ 1 cm had a 67% chance of being positive ($p < 0.001$), whereas nodes <1cm had a 20% chance of being positive.

Conclusions: With a significant percentage of central neck nodes <1cm being positive for malignancy in PTC, the decision to perform a central neck dissection cannot be based on pre-operative ultrasound size criteria alone.

16:48-17:00 *LigaSure vs Conventional Hemostasis in Thyroid Surgery: A Prospective Randomized Control Study* – P. Singh, D. O'Connell, P. Dziegielewski, M. Langille, D. Cote, J. Szudek, M. Allegretto, H. Seikaly, J. Harris, UNIVERSITY OF ALBERTA, EDMONTON, AB

Abstract #47

Background: Careful dissection with meticulous hemostasis is one of the keys of safe thyroid surgery: however it is often time consuming. The LigaSure system is a new diathermy hemostasis method which fuses vessel walls to form a collagen seal. LigaSure has been shown to be a safe and fast method of hemostatic control. Previous studies have shown a possible cost benefit of the LigaSure system in reducing operative times. The purpose of the study was to compare operative times using the LigaSure system to conventional titanium clips and surgical ties (CLT). A 25% reduction in total operative time was considered as a clinically significant reduction.

Type of Study: Randomized controlled trial (Level Ib evidence)

Methods: 50 patients were randomized into either thyroidectomy with LigaSure or CLT. Patient demographic, pathology, data as well as operative times and operative complication rate data was collected on all patients randomized.

Results: Mean operative time for the conventional group was 95.6 minutes (SD 36.75 minutes). There was no statistical or clinically significant difference between the CLT group and the LigaSure group. No significant differences were noted in patient demographics between the two groups.

Conclusion: The use of the Ligasure system in thyroidectomy did not reduce overall operative time by a clinically significant level, indicating limited utility in terms of cost reduction contradictory to current literature.

**MONDAY, MAY 11, 2009 - AFTERNOON
HALIFAX A BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Specialty Panel

17:00-108:00 *Interesting and Challenging Cases in Pediatric Otolaryngology*
CHAIR: S. Daniel, MONTREAL, QC

**MONDAY, MAY 11, 2009 - MORNING
HALIFAX BC BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: PEDIATRIC OTOLARYNGOLOGY

Chair: Dr. Chantel Giguere, Montreal, QC

08:00-08:08 *Passavant's Ridge in Patients with Velopharyngeal Insufficiency: Detection on Fluoroscopy and Nasendoscopy, and its Role in Closure of the Velopharynx* – A. Conlin, J. MacCormick, J.P. Vaccani, et al.
OTTAWA, ON

Learning Objectives

By the end of the presentation, the learner will be able to:

1. describe Passavant's ridge;
2. compare the rate at which it is detected on fluoroscopy versus nasendoscopy;
3. discuss its role in closure of the velopharynx among pediatric patients with velopharyngeal insufficiency;
4. comment on the utility of pre-operative investigations to detect presence or absence of Passavant's ridge.

Abstract #48

Objectives: Assessment of velopharyngeal insufficiency (VPI) commonly involves nasendoscopy (NE) and multiview video fluoroscopy (MVF). MVF involves exposure to ionizing radiation, which has been associated with increased rates of thyroid and parotid malignancy; however, MVF is believed to more reliably detect the presence of Passavant's ridge (PR) than NE. We hypothesize that PR will be detected on MVF more frequently than on NE; however, we are uncertain if it is involved in the actual closure of the velopharynx.

Methods: Retrospective review of NE and MVF from 63 subjects, 4-18 years old, presenting to a tertiary care VPI clinic.

Results: Overall, PR was detected on NE and/or MVF in 37 of 63 subjects. When detected, PR was seen with NE in 14 of 37 cases (38%) and with MVF in 37 of 37 cases (100%). The studies which showed PR were then reviewed to determine if PR contributed to the closure of the velopharynx (results pending).

Conclusions: MVF detected presence of PR much more frequently than NE in this series. Should PR be found to be involved in velopharyngeal closure, then MVF would be a necessary test; however, in the event that PR is not involved in velopharyngeal closure, the necessity of performing MVF to detect PR would be questionable.

08:08-08:16 *Review of Post-operative Respiratory Complications in Children Admitted Post-tonsillectomy* – A. Darnbrough, D. Leitao, WINNIPEG, MB

Learning Objectives

Preamble: The incidence of respiratory complications is thought to be higher in children that undergo tonsillectomy for OSA. Currently, the standard of care is to admit this population to a monitored bed overnight for observation.

Abstract #49

Objectives: To determine the risk of respiratory complications among pediatric patients admitted post-tonsillectomy. We also sought to determine if other patient characteristics were more predictive of complications than a diagnosis of OSA.

Methods: We performed a retrospective review of cases from Jan 1, 2007 to Dec. 31, 2007. Respiratory complications included: intubation, NIPPV, desaturations <91%, or oxygen use. Specific patient characteristics examined included age, weight, craniofacial anomalies, respiratory or cardiac disease, neurologic disorders, syndromes, sleep study results, and indication for surgery.

Results: Approximately 200 charts were reviewed. Based on preliminary analysis, the risk of respiratory complications post-tonsillectomy in admitted patients is small, with majority of cases treated only with supplemental oxygen. Patients who have no underlying co-morbid illness and/or mild OSA are at negligible risk for respiratory complications.

Conclusions: Otherwise healthy pediatric patients with sleep-disordered breathing or mild OSA are at negligible risk for respiratory complications, and could thus be managed as day surgery.

08:16-08:24 *Management of Airway Obstruction in the Repair of Recurrent Laryngotracheoesophageal Fistulae – L. Johnson, HALIFAX, NS*

Learning Objectives

1. To discuss the management of airway obstruction in the setting of aerodigestive anomalies.
2. To discuss the use of interposition grafts in the setting of recalcitrant airway fistulae.
3. To discuss the benefits of a multidisciplinary approach to complex aerodigestive case management.
4. To better understand the pathophysiology of recalcitrant airway fistulae and other underlying contributing surgical and patient factors.

Abstract #50

The management of recurrent airway fistulae and other aerodigestive tract anomalies often involves a multidisciplinary team approach. Two such cases are presented in the context of definitive management of a recalcitrant H-type tracheoesophageal fistula (TEF) and a recurrent type III laryngotracheoesophageal cleft (LTEC) with the placement of interposition grafts and the subsequent development of airway obstruction. The airway management, use of interposition grafts, and resolution of persistent TEF/LTEC are reviewed.

08:30-08:38 *Fetal Biology & Early Suppurative Otitis Media in the First Year of Life – A. Lasisi, O. Olayemi, O. Arinola, et al. IBADAN OYO, NIGERIA*

Learning Objectives

To show the role of immunobiologic factors in the development of early otitis media in the first year of life.

Abstract #51

Introduction: Immature immune systems have been reported to contribute to the development of early otitis media (EOM) in infancy. We hypothesized that low neonatal serum level of immunobiologic factors are significant for EOM and we aim at determining correlation between EOM and serum levels of retinol, zinc, Ig G and interferon Gamma (IFN-).

Method: Prospective study, the cord blood of the neonate was taken from the umbilical vein at delivery and serum extracted; the children were followed up for 12 – 18 months for the development of EOM. The serum was stored at -80°C and analysed for these factors. Suppurative OM was defined by the observation of purulent or mucoid otorrhoea microotomscopy.

Results: Subjects included 186 neonates followed up for 1 – 1.25 years. Of these at least 1 episode of EOM was seen in 69(37%), made up of 40 males and 29 females. The age at presentation was 3weeks and 8 months, mean 14 weeks, SD 6. 2. The gestational age was 31 - 45 weeks, mean 39 weeks and SD 0.16, while the birth weight was 1.25 – 4.3kg, mean 3.1kg, SD 0.45. The mean neonatal serum levels among the cases and control subjects respectively were Ig G 1180 mg/ml and 1370.2 mg/ml(P=0.461), retinol 0.95 µg/L and 1.08 µg/L(P = 0.0033), zinc 0.88 µg/L and 1.05 µg/L(P=0.0136) and IFN- 45.3 pg/ml and 170.2pg/ml (P=0.000).

Conclusion: Low levels of immunobiologic factors in the neonatal period are significant factors in the development of Suppurative EOM in the first year of life.

08:38-08:46 *Submucous Cleft Palate and Otologic Disease: Are They Associated? – A. Menezes, A. Hu, M. Husein, et al. LONDON, ON*

Learning Objectives

By the end of this presentation, CSO attendees should be able to discuss whether otologic disease is related to a symptomatic SMCP.

By the end of this presentation, CSO attendees should be able to counsel patients on the natural history of patients with SMCP.

By the end of this presentation, CSO attendees should be able to list the different medical and surgical treatment options for SMCP when discussing the options of treatment with a patient.

Abstract #52

Objectives: Only one in nine patients with a submucous cleft palate (SMCP) are symptomatic and require palate surgery. It is unknown whether otologic disease is correlated with symptomatic submucous cleft palates. The objective of this study sought to determine whether otologic disease is a predictor of a symptomatic SMCP requiring surgery.

Methods: A retrospective chart review was conducted of 27 patients presenting to our centre with a SMCP over the past 4 years. Demographic data, patient presentation, speech, language, and otologic history, physical exam, nasopharyngoscopy, multiview videofluoroscopy, perceptual assessment (ACPA database), audiogram, velopharyngeal insufficiency, and management variables were collected and correlational evaluation was conducted.

Results: While analyses did show strong correlations between some anticipated variables (e.g. hypernasality and nasal air emission, speech intelligibility and articulatory compensation), no otologic variable were found to be significant in relation to the other variables evaluated.

Conclusions: Otologic disease was not a predictor of symptomatic SMCPs in this population and conversely, symptomatic

SMCP is not a predictor of otologic disease. These data suggest that other predictors of symptomatic SMCP should be investigated.

08:46-08:54 ***Prevention of Recurrent Acute Otitis Media with Nasal Irrigations Using a Saline Solution (PrOMIS): A Randomized Pilot Clinical Trial*** – M. Stephenson, A. Lapointe, J. Lacroix, MONTREAL, PQ

Abstract #53

Introduction: Normal saline nasal cavity irrigations (NSNI) are commonly recommended by pediatricians and otolaryngologists to prevent recurrent acute otitis media (rAOM). However, no published scientific study corroborates or invalidates this practice.

Goal: To determine the efficacy of NSNI to prevent rAOM.

Method: Pilot randomized controlled clinical trial. All consecutive patients with a diagnosis of rAOM were eligible. Recruited patients were randomized in 2 groups. Only patients in the treatment group proceeded with NSNI. The primary outcome of the study was the incidence of rAOM observed during a 3 month period.

Results: Twenty-nine patients met the inclusion and exclusion criteria and agreed to participate. There was a statistically significant lower incidence of rAOM in the treatment group (p=0.003, Chi-square).

Conclusion: Our results suggest that NSNI could effectively prevent rAOM. A larger scale randomized multicentre study is indicated to verify for external validity and to properly assess safety issues and risk factors.

KEY WORDS:

Acute otitis media, child, nasal irrigations, pediatrics, saline solution, prevention, randomized controlled trial

09:00-09:08 ***Platinum Ototoxicity in Children, A Long-term Follow Up*** – T. Al-Khatib, S. Daniel, A. Carret, et al. MONTREAL, PQ

Learning Objectives

At the end of the presentation the learner will understand the importance of long term follow up of patients treated with platinum chemotherapy.

Abstract #54

Objective: To assess the long-term ototoxicity effect of platinum chemotherapy in a series of pediatric patients.

Design: A prospective cohort study.

Methods: Patients who received platinum chemotherapy were identified through review of the pharmacy records from 2000-2005. Audiograms pre & post- treatment with cisplatin were noted. The patients were brought back long after treatment for a repeat audiogram and a questionnaire to assess the impact of ototoxicity on their quality of life.

Results: 39 patients received platinum chemotherapy. Patients' exclusion: two had no pre-chemo audiograms, one had retinoblastoma with congenital hearing loss, three were lost to follow up, five deceased, and seven refused participation. The total number of patients included was 33 with long term follow up total of 21 patients. The follow up period ranged from 1.5 to 6.6 years (median of 3.4 years). 39% of the patients suffered from ototoxicity (3 mild, 3 moderate, 7 sever-profound). 33 % of audiograms worsened on long term follow up. Questionnaire revealed 70 % subjective hearing loss with 40% requiring hearing aids.

Conclusion: Ototoxicity after platinum chemotherapy can present or worsen years after completion of therapy. Therefore, we recommend long-term follow up.

09:08-09:16 ***A Noise-Induced Hearing Loss Conservation Program: Assessment of Acoustic Risk-Taking Behavioural Changes in Elementary School Children*** – A. Radetski, B. Westerberg, S. Nabi, et al. VANCOUVER, BC

Learning Objectives

1. To explore the current acoustic risk-taking behaviour hearing conservation practices in grade six children.
2. To determine the differences in acoustic risk-taking behaviour of sixth-grade children exposed to the Hearing Foundation of Canada's Sound Sense youth noise-induced-hearing-loss education program as compared to those who do not participate.
3. To determine the differences in acoustic risk-taking behaviour of sixth-grade children before-and-after their participation in the Hearing Foundation of Canada's Sound Sense youth noise-induced-hearing-loss education program.
4. To explore to what extent the Hearing Foundation of Canada's Sound Sense youth noise-induced-hearing-loss education program affords a change in self-reported acoustic risk-taking behaviour in sixth-graders in the short- and long-term by comparing pre-intervention survey responses to post-intervention survey responses.

Abstract #55

Objectives: Noise-induced hearing loss has been attributed to noise exposure in adolescence and childhood, which appears to accelerate natural hearing loss experienced in mature age. This study was designed to determine whether an attempt to change acoustic risk-taking behaviours (ARTB) of sixth-graders by presenting a hearing conservation program produced any short- or long-term results.

Methods: Sixteen Vancouver School Board schools were randomly assigned to either an intervention or control group, with only the intervention group receiving Sound Sense, a hearing conservation program designed by The Hearing Foundation of Canada. Both groups (n = 811) were administered identical questionnaires pertaining to the frequency of ARTB and hearing conservation practices at baseline, and short- and long-term follow-up. The data was subjected to logistic regression analysis.

Results: Our findings indicate that 15% of students listen to their personal music player for more than 1 hour per day. 22% of those students were not able to hear people speaking when listening to their personal music players. Intervention did show to have a positive short-term effect on earplug use, but behaviours regressed back to baseline in the long-term.

Conclusions: This study makes the case for implementing an annual hearing-loss prevention program in schools.

09:16-09:24 ***The Ontario Infant Hearing Program: Assessment of the High Risk Surveillance Strategy Protocol at the Children's Hospital of Eastern Ontario – D. Schramm, C. Semple, L. Moran, OTTAWA, ON***

Learning Objectives

By the end of this presentation, all clinicians will:

1. be able to describe how both low and high risk infants in Ontario are screened for hearing loss;
2. be able to list possible causes for an initial “false negative” result;
3. be able to consider the necessity of performing subsequent behavioural tests (visual reinforcement audiometry) in certain high risk infants

Abstract #56

Early detection of paediatric hearing loss would be expected to translate into more effective intervention. The Ontario Infant Hearing Program High Risk Surveillance Strategy Protocol was revised in 2004 to focus on those at especially high risk of hearing loss.

Infants are screened for hearing loss on discharge from the special care nursery. Those considered at low risk are screened with distortion product otoacoustic emissions. Infants with one or more of 15 high risk indicators are screened with automated auditory brainstem response. This “at risk” group is re-screened at 4 months with auditory brainstem response and at 10–12 months corrected age with behavioural tests (visual reinforcement audiometry).

Infants in the Children’s Hospital of Eastern Ontario Neonatal Intensive Care Unit who passed the initial hearing screening test (typically automated auditory brainstem response at age 0-4 months) were identified. Those who were found to have moderate or greater unilateral or bilateral sensorineural hearing loss on subsequent audiometric assessment were studied. The etiology of late-identified hearing loss and their long term outcomes were evaluated. Causes for an initial “false negative” result may include progressive genetic hearing loss, persistent pulmonary hypertension of the newborn, perinatal infection, meningitis, auditory neuropathy, and subsequent medical interventions.

09:30-09:38 ***Pediatric Inferior Turbinoplasty With or Without Adenoidectomy. Preliminary Report on Safety, Symptom Control and Improvement of Quality of Life – M. Langille, P. Dziegielewski, P. Singh, et al. EDMONTON, AB***

Abstract #57

Background: Chronic rhinitis (CR) in childhood is a common condition for which a limited surgical repertoire exists. Recently reports suggest that inferior turbinoplasty (IT) may offer a valuable addition to the armamentarium of the surgeon.

Objective: To determine symptom control, safety and quality of life improvement after IT with or without adenoidectomy (Ad) in children.

Methods: Retrospective uncontrolled cohort. We included children who presented with CR refractory to medical treatment, and underwent IT with or without Ad. A prospective database contained age, gender, other diagnoses, and complications. From the charts we documented reliance on medical treatment, difference in incidence of recurrent acute infections and their duration. We administered the Glasgow Children’s Benefit Inventory (GCBI) for demonstration of QOL improvement.

Results: 64 patients were identified. 26 were excluded due to concurrent septal or sinus surgery. 38 consecutive patients were included, 20 of whom concurrently underwent Ad. The median age was 11 years, (15 females; 23 males). One complication required admission. The GCBI scores showed that all derived benefit in all domains.

Conclusion: Preliminary results indicate that IT is a safe, beneficial procedure for CR in children. Its impact on QOL is comparable to well established operations in Otolaryngology.

09:38-09:46 ***Two Heads are Better Than One: The Experiences of a Combined Pediatric and Head and Neck Otolaryngology Service – S. Nabi, J. Franklin, M. Husein, et al. LONDON, ON***

Learning Objectives

1. To recognize the etiologies that lead to parotidectomies and thyroidectomies in a Canadian pediatric population.
2. To recognize that pediatric thyroidectomies will be performed in greater numbers and in younger patients with the increased use of genetic testing for MEN 2.

3. To recognize the advantages of a combined approach: head and neck adult otolaryngologists perform greater numbers of parotidectomies and thyroidectomies than pediatric otolaryngologists, and hence have a greater degree of experience with these operations, but that pediatric otolaryngologists have a greater degree of experience and comfort managing younger patients and their families.

Abstract #58

Objectives: Pediatric thyroidectomies and parotidectomies are uncommon. We reviewed our experiences as a combined pediatric and head and neck otolaryngology service, and assessed the experiences of other Canadian otolaryngologists.

Methods: Retrospective review of all pediatric thyroidectomies and parotidectomies from 2005-2008 (children <16 years) performed jointly by two surgeons. Satisfaction was assessed via a VAS questionnaire. CSO practicing members were emailed a survey assessing volume and comfort with parotid and thyroid surgery.

Results: Eight thyroidectomies (mean 9.8 years; 5.5-14.9) and four parotidectomies (mean 9.5 years; 3.2-13.9) were performed with no long-term complications. Thirteen fellowship-trained pediatric otolaryngologists averaged less than four thyroidectomies/parotidectomies combined per year; 22 fellowship-trained head and neck otolaryngologists averaged over 75 thyroidectomies and 25 parotidectomies per year, but less than one in children. Head and neck otolaryngologists were less comfortable with younger patients; pediatric otolaryngologists were less comfortable with older patients, but were more consistent with comfort level across all age groups.

Conclusions: Based on the success at our institution and the comfort levels and volumes by adult and pediatric otolaryngologists, we suggest a combined approach. This combines the knowledge and intricacies of pediatric care with a great degree of surgical experience in thyroid and parotid surgery.

Workshop #9

10:30-11:30 *The Endaural Technique - An Ideal Approach to the Middle Ear for Otologists* – J. Chen, V. Lin, J. Hochman, TORONTO, ON

Learning Objectives

1. After the presentation, the participant will understand how to effectively perform an endaural approach.
2. The participant will be able to effectively incorporate the endaural approach in surgical planning of their otologic cases.
3. The participant will understand the many benefits & limitations of the endaural approach.
4. The participant will understand the role of this approach in teaching and learning of otologic surgery, and will be able to use nurse assistance more effectively.

Abstract #59

Successful otologic surgery is completely dependent on proper exposure. Traditionally, the trans-canal approach has been the workhorse for most simple tympanoplasty and middle ear (stapedotomy, ossiculoplasty) procedures. However, this approach has several major disadvantages. The surgeon stabilizes the aural speculum in his/her hands severely limiting their hand dexterity. The narrow, cylindrical-like exposure significantly reduces the amount of light reaching the operative field thus reducing visual acuity. Furthermore, this access only permits a single pair of instruments in the surgical field thus making the trans-canal approach non-ideal for otologic teaching centres. It is the standard in our practice to use the endaural approach for the majority of our tympanoplasty, middle ear and mastoid procedures for several reasons. First, it allows both hands to be completely free during surgery. Second, the funnel shape of the endaural approach allows ample amount of light to reach the operative field. Third, two pairs of instruments can be in the field allowing the attending surgeon to safely and effectively assist trainees. Finally, the endaural is simple to perform and will not lengthen the surgical time compared to the more involved post-auricular approach.

In this workshop, we will present our experience with the endaural approach and present case scenarios with video examples to illustrate this approach and its many advantages to our audience.

**MONDAY, MAY 11, 2009 - MORNING
HALIFAX BC BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: OTOLOGY 1

Chair: Dr. Brian Blakley, Winnipeg, MB

11:30-11:38 *The SMART Piston Stapedectomy Prosthesis: 5 Year Results* – J. Cho, P. Marck, P. Marck, CALGARY, AB

Learning Objectives

The attendee will learn of the long term results utilizing the SMART piston prosthesis and its self crimping technology that permits faster, easier surgery with excellent audiologic results.

Abstract #60

Objectives: Patients undergoing stapedectomy utilizing the SMART piston prosthesis for otosclerosis were followed for a minimum of one year and a maximum of 5 years. Patients were analyzed to determine the audiologic improvement, prosthesis failures and operative time.

Methods: This prospective study followed 78 patients (82 ears) who underwent stapedectomy surgery performed by the senior author using the SMART piston prosthesis that utilizes Nitinol technology that permits self crimping. Pre and post operative audiologic testing was performed by an audiologist (Paulette Marck). The data were analyzed for closure of the air bone gap. Also analyzed was the operative time for the surgery.

Results: Two of the 78 patients did not have surgery, one due to a very thick footplate and a second due to unfavorable anatomy. The remaining patients (76 representing 80 ears) underwent stapedectomy surgery (non-laser) using the SMART piston prosthesis. An air bone gap closure at 10dB was obtained in 74 ears and all patients had closure at 20dB. There were no prosthesis failures, no revisions required in these patients. Operative times were obtained from the surgical record. The average operative time using the SMART piston prosthesis was 21.24 minutes whereas using a traditional prosthesis (Fisch type) required operative times of 28.85 minutes.

Conclusions: The SMART piston prosthesis is a safe, reliable device that allows for easy, quick self crimping.

11:38-11:46 *Ten-Year Review of Endolymphatic Sac Surgery for Intractable Meniere's Disease* – A. Hu, L. Parnes, LONDON, ON

Learning Objectives

By the end of this presentation, CSO attendees should be able to describe the expected success rates of endolymphatic sac surgery for Meniere's disease when discussing the options of treatment with a patient.

By the end of this presentation, CSO attendees should be able to list the risks and the benefits of endolymphatic sac surgery for Meniere's disease when obtaining consent for this procedure.

By the end of this presentation, CSO attendees should be able to list the different medical and surgical treatment options for Meniere's disease when discussing the options of treatment with a patient.

Abstract #61

Objective: To review our 10 year experience of endolymphatic sac surgery as a treatment for intractable Meniere's Disease.

Methods: Using the 1995 American Academy of Otolaryngology-Head & Neck Surgery Committee on Hearing and Equilibrium criteria, stage, vertigo class, and hearing results were addressed. A retrospective chart review of patients presenting for endolymphatic sac surgery from 1998 to 2007 was performed.

Results: Thirty patients with 33 ears had endolymphatic sac surgery (63.6% male, mean age 49). Average follow-up was 30.6 months. Long term vertigo control was: 35.5% in class A, 29% in class B, 6.5% in class C, 3.2% in class E, and 24.2% in class F. If class A and B are considered to be successful, then 64.5% were successful. Hearing stage improved in 14.8%, remained the same in 51.9%, and worsened in 33.3%. Secondary treatment after endolymphatic sac surgery was performed in 26.7%. Secondary treatments included: intratympanic gentamycin treatments (13.3%), labyrinthectomy (10.0%), vestibular neurectomy (3.3%). Three patients had profound sensorineural hearing loss resulting from the surgery.

Conclusions: Endolymphatic sac surgery is a surgical option for Meniere's disease. It offers relief from vertigo spells in selected patients, but they need to be cautioned about the risk of hearing loss..

11:46-11:54 *Does Cochlear Implantation Cause Vestibulopathy?* – R. Chowdhury, R. Liu, EDMONTON, AB

Abstract #62

Objective: The purpose of this study is to determine if cochlear implant surgery results in clinically significant vestibular dysfunction based on subjective and quantitative measures.

Methods: Ten adult patients undergoing cochlear implantation were assessed before and after surgery. Pre-operatively, two questionnaires were administered: the Activities-specific Balance Confidence Scale and the Dizziness Handicap Inventory. Computerized dynamic posturography and caloric testing were applied to obtain objective measures of vestibular function. The questionnaires and objective tests were repeated 8 to 12 weeks post-operatively. Differences in responses and measurements obtained for each patient determined change in vestibular function.

Results: Results in six females and four males undergoing unilateral cochlear implantation were obtained. No patient reported subjectively worsened balance function post-operatively, with two subjects having improved scores on their post-operative questionnaires. Posturography results were no worse in any patient following implantation, with one patient showing improved results on the sensory organization test. Response to caloric testing was reduced an average of 25% on the side of implantation.

Conclusion: Unilateral cochlear implant surgery results in no clinically significant disturbance of vestibular function, despite measurable reduction in caloric test response.

**MONDAY, MAY 11, 2009 - MORNING
ACADIA ABC ROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: FACIAL, PLASTIC AND RECONSTRUCTIVE SURGERY

Chair: Dr. J. Trites, Halifax, NS

08:00-08:08 ***Total Glossectomy with Free Flap Reconstruction: How do Functional Outcomes Correlate with Quality of Life?*** – P. Dziegielewski, A. Joshi, J. Reiger, et al. EDMONTON, AB

Abstract #63

Objectives: Total glossectomy has historically left patients with dismal post-operative swallowing and speech function. Moreover, losing one's tongue has shown to decrease quality of life. However, the advent to free tissue transfer has led to increasingly promising outcomes. The purpose of this study was to investigate the functional outcomes following total glossectomy and to correlate these to overall quality of life.

Methods: 12 patients with advanced tongue cancer were treated with total glossectomy and free flap reconstruction from 2003-2007. All patients were prospectively enrolled in a functional outcomes protocol including pre- and 1 year post-operative video fluoroscopic swallowing and speech intelligibility studies as well as validated quality of life questionnaires.

Results: 75% of patients were able to meet daily caloric needs orally. 15% required supplementation with g-tube feeds and 5% were entirely g-tube dependent. Of those supplementing with g-tube feeds, 80% only required supplementation for pills. Single word intelligibility averaged 81%, while sentence intelligibility averaged 87%. 75% quoted overall quality of life as good or very good.

Conclusion: Total glossectomy with free flap reconstruction provides improved post-operative functional outcomes compared to historical reports. Patients reported quality of life correlates well with the improvement in post-operative upper aerodigestive tract function.

08:08-08:16 ***Functional Soft Palate Reconstruction: A Comprehensive Surgical Approach*** – H. Seikaly, J. Rieger, K. Ansari, et al. EDMONTON, AB

Abstract #64

Background: Dysfunction of the soft palate is devastating to the patient's quality of life resulting in an existence of unintelligible speech and poor swallowing. Reconstruction of the soft palate is complex because the dynamic fibromuscular structure can not be duplicated. The efficacy of soft palate reconstruction has, therefore, been called into question.

Purpose: The purpose of this paper is: 1) to describe our comprehensive surgical paradigm for soft palate reconstruction; 2) to provide details of the surgical techniques used and 3) to report on patient functional outcomes.

Methods: 52 patients spanning 3 different size-based categories of soft palate reconstruction were included in the final analysis. Using videofluoroscopic studies of swallowing, the presence of nasopharyngeal reflux and any instance of aspiration of a bolus into the airway was noted. In addition, a simple diet survey was completed, and the use of a g-tube was noted.

Results: The results reveal that our protocol for soft palate reconstruction provided the majority of our patients with separation of the oropharynx and nasopharynx, while at the same time maintaining nasal patency. Restoration of swallowing function was timely, with 91% of the patients returning to an oral diet at the early postoperative visit, and only 14% of patients demonstrating mild nasopharyngeal reflux.

Conclusions: We have developed a comprehensive reconstructive protocol that provides patients with separation of the oropharynx and nasopharynx, while at the same time maintaining nasal patency.

08:16-08:24 ***Development of a Novel Preoperative Assessment Tool in Predicting Outcomes in Functional Rhinoplasty*** – A. Shahnava, M. Taylor, HALIFAX, NS

Abstract #65

Objectives: We aim to measure the functional and aesthetic outcomes in functional rhinoplasty patients, and to study an in-office test used in selection of appropriate surgical techniques in functional rhinoplasties. The rhinoplasty outcomes evaluation form (ROE) was used to subjectively assess the surgical results in functional rhinoplasty patients.

Methods: 35 patients, who underwent functional rhinoplasties at our institution were given the ROE which provided subjective interpretation of nasal airflow and aesthetics of the nose. Patients were also assessed with an external and internal valve maneuver used at our institution to help with surgical planning and technique.

Results: Overall mean ROE scores increased from 41.9 (pre-op) to 81.7 (post-op). Subjective improvement in breathing scores increased from 5.2 to 7.7 after surgery on a ten point visual analogue scale. 86% of the patients reported improvement in their nasal airflow and 77% expressed improvement of nasal aesthetics. Using our in-office test for internal and external valve defects, we found moderate correlation with post surgical scores, and better than expected functional results when using

batten and spreader grafts.

Conclusions: Functional rhinoplasties can be significantly effective at improving nasal airflow and the subjective aesthetics of the nose. The ROE and our in-office testing of nasal valve defects can be an important tool in the assessment of patients undergoing functional rhinoplasty.

08:30-08:38 ***Stellate Ganglion Block - A New Technique to Reduce the Incidence of Microvascular Spasm During Free Tissue Transfer of the Head & Neck – C. Sader, M. Taylor, R. Hart, et al. HALIFAX, NS***

Learning Objectives

1. To discuss microvascular spasm in Head and Neck free tissue transfer
2. To outline the effects of sympathetic blockade on vascular flow of the Head and Neck and show its usefulness in microvascular surgery.

Abstract #66

Objectives: To clinically and radiologically study the vascular effects of a single intra-operative injection of 0.5% bupivocaine in the stellate ganglion of patients undergoing free tissue transfer of the head & neck.

Methods: A prospective study of 40 consecutive patients at a single institution undergoing primary microvascular reconstruction of a head and neck defect underwent stellate ganglion block utilising 2 mls of 0.5% bupivocaine. The stellate ganglion block was performed under direct vision, prior to the microvascular anastomosis. Intraoperative assessment of flow through the external carotid system was measured with intra-operative doppler ultrasonography pre and post injection. Clinical correlation was made of the incidence of vasospasm, after the anastomosis was complete.

Results: Objectively there was an increase in blood flow seen through the external carotid system measured with the doppler ultrasound. This correlated with a clinical reduction in the incidence of microvascular spasm.

Conclusion: We advocate the use of a stellate ganglion block in microvascular reconstruction of the head and neck.

08:38-08:46 ***The Role of Age and Comorbid Disease in Perioperative Complications Following Reconstructive Head & Neck Surgery – M. Al-Gilani, R. Hart, M. Taylor, et al. HALIFAX, NS***

Learning Objectives

1. To review the incidence of perioperative complications in reconstructive head & neck surgery.
2. To determine what factors are associated with higher incidence of post-operative complications in patients undergoing reconstructive microvascular head & neck surgery.

Abstract #67

Objective: To determine the predictors of peri-operative complications in patients who undergo microvascular free flap reconstruction of the head and neck.

Methods: Retrospective chart review of all reconstructive microvascular head & neck surgeries performed at the Queen Elizabeth-II Health Sciences Center in Halifax, Nova Scotia from Sept 1, 2003 until August 31, 2008.

Results: The review is still ongoing, looking at age, sex, premorbid conditions, surgical procedures, surgical time, length of ICU stay & peri/post operative complications. This study will determine if any of these factors are significantly associated with poorer outcomes in head and neck cancer patients undergoing microvascular free flap reconstruction.

08:46-08:54 ***Monitoring and Revascularization Protocol for Salvage of Microvascular Flaps Undergoing Early or Late Thrombosis – A. Chalian, PHILADELPHIA, PA***

Learning Objectives

1. The participant will understand the protocols to monitor and salvage microvascular flaps.
2. The participant will understand the technical aspects and risks of microvascular surgery.
3. The participant will understand the incidence and risk factors for microvascular flap failures.

Abstract #68

Objective: To review the monitoring and revascularization protocol to salvage flaps undergoing early or late vascular thrombosis after head and neck surgery.

Design and Methods: Retrospective case series from academic head and neck surgery program, managed with standardized monitoring and rescue protocol. Four hundred patients underwent microvascular reconstructions over an eleven year period.

Surgical Procedure: Eight common flap donor sites were utilized. Outcomes measured: 1) incidence of vascular complications (venous and arterial thromboses); 2) time intervals between initial surgery, clinical diagnosis of vascular compromise, re-exploration and 3) final outcome (salvage vs failure).

Results: Sixteen free flaps (4.0 percent) developed vascular compromise: from 5.5 hours up to 8 days after the initial microvascular anastomosis and were classified as early within the first 48 hours postoperatively or late. There were four early

complications with a 25% salvage rate. Of twelve late complications, seven late complications were salvaged, with only one proceeding to partial flap loss. Five late complications were complete losses. Overall salvage rate was 50 percent (8 of 16 flaps), with a final success rate of 98 percent.

Conclusion: Late vascular complications occurring as late as six days after initial anastomosis were successfully salvaged using the protocol.

08:54-09:02 ***Free Tissue Grafting to Improve Vessel Geometry in Microvascular Head and Neck Reconstruction*** – **M. Taylor**, C. Sader, R. Hart, et al. HALIFAX, NS

Learning Objectives

1. Outline possibly complications following microvascular reconstructive surgery.
2. Present a novel technique for preventing kinking of the microvascular pedicle.
3. Discuss potential donor sites for free fat and muscle grafting.

Abstract #69

Objective: To describe a novel technique for improving vessel geometry in microvascular head and neck reconstructive surgery.

Methods: A prospective study at a tertiary care medical centre.

Results: A total of 50 free flap cases were included. Grafting was performed only on patients where the staff surgeons felt there was a significant risk of kinking of the microvascular pedicle. 47 cases had free fat grafts and 3 cases had free muscle grafts performed. There were no complications related to the harvest of these grafts. A total of 49 out of the 50 flaps were successful.

Conclusion: Free tissue grafting is an excellent adjunct to improving vessel geometry and preventing kinking of the microvascular pedicle after reconstructive surgery. We have found these grafts to be extremely useful especially in cases in which vessel kinking is our concern.

09:10-09:18 ***The Scapular Tip Free Flap: A New Angle to Jaw Reconstruction*** – **R. Moukarbel**, K. Fung, J. Franklin, et al. LONDON, ON

Learning Objectives

By the end of the presentation, the audience will be able to describe the advantages of the scapular tip free flap and identify its importance in maxillomandibular reconstruction.

Abstract #70

Objectives: To present our experience with the scapular tip free flap for reconstruction of complex defects of the mandible and maxilla.

Methods: A retrospective review of our series from 2002 to 2007 was conducted. Data collected included patient demographics, tumor staging and type of surgical intervention and extent of the defect. Perioperative complications and outcomes were also evaluated.

Conclusion: The scapular tip free flap provides an additional option for reconstruction of complex defects of the maxilla and mandible.

09:18-09:26 ***The Paramedian Forehead Flap in Nasal Reconstruction*** – **H. Seikaly**, K. Ansari, C. Diamond, et al. EDMONTON, AB

Abstract #70

Objective: To evaluate the outcomes of nasal reconstruction with the paramedian forehead flap.

Design: Case series, retrospective analysis of outcomes.

Setting: Tertiary referral teaching hospital.

Methods: All the patients that had undergone nasal reconstruction with a paramedian forehead flap were retrospectively reviewed.

Results: 43 patients (26 male, 17 female) with nasal defects were reconstructed using 45 paramedian forehead flaps. The average age was 54.4 (range 17-82). The defects resulted from basal cell carcinoma (32), trauma (5), squamous cell carcinoma (4), lentiginomaligna (1), and hemangioma (1). 20 of the defects were full thickness, 24 were skin only and one was skin and cartilage. All flaps survived. Three flaps had partial loss. Two of those were in smokers and the other was due to a hematoma. One flap had severe venous congestion which resolved by the third postoperative day. The forehead donor sites were closed primarily (38), secondarily (5), and with skin grafts (2). Donor site complications included two postoperative infections and scarring requiring dermabrasion in five patients.

Conclusion: The paramedian forehead flap is a highly reliable and useful flap in nasal reconstruction. Careful attention to the flap upon first transferring can minimize complications and improve patient outcomes

09:26-09:34 ***The Temporoparietal Free Flap Used to Prevent Pharyngocutaneous Fistulae Following Laryngectomy*** – **J. Yoo**, K. Higgins, D. Enepekides, et al. LONDON, ON

Learning Objectives

1. After the presentation, the participant will develop an understanding of complications associated with laryngectomy.
2. Following the presentation, the participant will recognize surgical options for preventing pharyngocutaneous fistulae.
3. The role of free flap reconstruction following laryngectomy, with particular focus on the temporoparietal flap, will be understood.

Abstract #71

Pharyngocutaneous fistula is a troublesome complication following laryngectomy. Re-enforcement of the pharyngeal closure using various free and pedicled flaps have been advocated in order to reduce this incidence. The objective of this study is to introduce the temporoparietal free flap (TPFF) as a novel option for this application. A retrospective review was conducted from two tertiary care academic institutions, of standard laryngectomies with TPFF re-enforcement of the pharyngeal closure. Indications for its application, donor-site morbidity and the incidence of peri-operative complications are described.

09:34-09:42 *Efficacy of Salivary Bypass Tube in Preventing Fistula Formation and Pharyngeal Stenosis Following Total Laryngopharyngectomy With Radial Forearm Free Flap Reconstruction: A Randomized Control Trial – R. Chowdhury, H. Chowdhury, K. Ansari, et al. EDMONTON, AB*

Learning Objectives

By the end of this session, the head and neck resection and reconstructive surgeon will be able to more effectively consider methods used to reduce post operative complications in patients undergoing total laryngopharyngectomy, and in particular, the salivary bypass tube, in the context of a particular patient's comorbidities, malignancy and resulting defect.

By the end of this session, the head and neck resection and reconstructive surgeon will have a more in depth knowledge of the evidence surrounding methods used to reduce complications following total laryngopharyngectomy and be better able to apply this knowledge in a particular clinical situation.

Abstract #72

Objective: After surgical resection of laryngeal or hypopharyngeal malignancies, repair of the remaining defect requires introduction of free vascularized tissue. Despite significant advances in reconstructive techniques, post-operative complications such as fistula formation or stenosis are an ongoing problem. Salivary bypass tubes have been theorized to reduce such complications. A randomized control trial was conducted to determine if salivary bypass tube reduces the incidence of fistula formation and stenosis following total laryngopharyngectomy with radial forearm free flap reconstruction.

Methods: We prospectively enrolled patients at the University of Alberta hospital from January 2008 onwards undergoing total laryngopharyngectomy with radial forearm free flap reconstruction. Patients were randomized to either receive a salivary bypass tube or not. Each patient was followed for development of fistula formation or stenosis. Our endpoints were fistula formation and pharyngeal/esophageal stenosis.

Results: Our preliminary results do not show a statistically significant decrease in the incidence of fistula or stenosis formation following use of salivary bypass tube.

Conclusion: Our preliminary results do not support the use of the salivary bypass tube in reducing fistula or stenosis formation in total laryngopharyngectomy patients with radial forearm free flap reconstructions. More definitive conclusions will be made as further patients complete

MONDAY, MAY 11, 2009 - MORNING ACADIA ABC ROOM MARRIOTT HARBOURFRONT HOTEL

Paper Session: HEAD AND NECK SURGERY 1

Chair: Dr. M. Corsten, Ottawa, ON and Dr. D. Enekipedes, Toronto, ON

10:30-10:38 *The Impact of Clinical vs. Pathological Staging in Oral Cavity Carcinoma – A Multi-institutional Analysis of Survival – V. Byron, D. O'Connell, J. Dort, et al. CALGARY, AB*

Abstract #73

Objectives: To evaluate any disparity in clinical versus pathological TNM staging in oral cavity squamous cell carcinoma (OCSCC) patients and any impact of this on survival.

Methods: Demographic, survival, staging, and pathologic data on all (460) patients undergoing surgical treatment for OCSCC in Alberta between 1998 and 2006 was collected. Clinical TNM vs pathological TNM staging was compared. Patients were stratified as pathologically down-staged, up-staged or same-staged. Survival differences between groups were analyzed using Kaplan-Meier and Cox regression models.

Results: Tumor staging overall was unchanged in 82.7% of patients, with pathological up-staging and down-staging in 14.3% and 2.7% of cases respectively. Two and five year disease specific survivals for all groups were calculated as follows. Group 1 - Early stage OCSCC that underwent no stage change: 87% and 79%. Group 2 - Early stage OCSCC upstaged: 65%

and 47%. Group 3 – Advanced stage OCSCC down-staged: 82% and 72%. Advanced stage OCSCC who underwent no stage change: 54% and 43%.

Conclusions: Some disparity exists in clinical vs. pathological staging in OCSCC. Compared to advanced stage cancers that were not upstaged following pathology analysis the upstaged group had an 11% survival benefit at 2 years. To ensure appropriate adjuvant treatment modalities are utilized in patients who are subsequently upstaged to advanced stage OCSCC surgical resection should be utilized in all cases of OCSCC.

10:38-10:46 *Squamous Cell Carcinoma of the Alveolus and Hard Palate - The Princess Margaret Experience* – N. Chauhan, D. Goldstein, TORONTO, ON

Abstract #74

Objectives: Squamous cell carcinoma is the most common malignancy of the oral cavity. It is associated with significant morbidity and, as with other malignancies of the upper aerodigestive mucosa, advanced disease is disfiguring and debilitating. Our aim as head and neck surgical oncologists is to cure disease, restore function, maintain optimal aesthetic outcomes but also to improve quality of life through our therapeutic maneuvers. Our aim was to investigate the Princess Margaret Hospital (PMH) experience with patients with alveolus and palate carcinoma, two commonly grouped sub-sites in the oral cavity.

Methods: Retrospective analysis of 10 years of data detailing the PMH experience.

Results: 112 patients in total were treated (99 Alveolus, 13 Palate). 66% of patients presented with advanced disease (Stage III/IV). 80% of patients had primary surgery as their treatment modality, with 25% undergoing postoperative radiotherapy. 37% underwent free flap reconstruction. Unfortunately 36% of patients had local/distant failure, and 27% of patients died of their disease. Detailed statistical analysis of pathologic parameters is being conducted at present.

Conclusions: SCC of the alveolus and palate is a disease entity associated with significant morbidity due to the often late stage of presentation, and sometimes disfiguring treatment. Early disease is highly curable, and late presentation has been associated with significant treatment failure and morbidity in our experience.

10:46-10:54 *Fluorescence Visualization Improves Surgical Management of High-risk Oral Lesions* – S. Durham, C. Poh, K. Lee, et al. VANCOUVER, BC

Learning Objectives

By the end of the presentation the attendee will be able to describe the application of autofluorescence in excision of high risk lesions of the oral cavity and its benefit in reducing the incidence of recurrence.

Abstract #75

Introduction: Key to management of carcinoma of the oral cavity is the recognition of sub-clinical field change and the importance of setting appropriate margins to ensure removal of all high-risk disease.

Objective: To assess the efficacy of fluorescence visualization (FV) guided surgery in reducing recurrence of severe dysplasia, carcinoma-in-situ or early invasive carcinoma (HRLs) of the oral cavity.

Method: From 2004 to 2008 163 patients with HRLs were treated with surgical excision. Eighty-seven patients had surgery with FV guidance (FV group) while 76 were treated with conventional surgery (control group). Recurrence was defined as the presence of clinical lesion at follow-up or those with biopsy proven HRL. Time to recurrence was estimated by the Kaplan-Meier method, and the relative risks were determined using Cox regression analysis.

Results: There is no significant difference between FV and control groups in age, gender, smoking habit, lesion anatomical site or stage. There were significantly fewer cases presenting with either a clinical lesion or a histological HRL at the last follow-up in FV group (7% vs. 55%; 2% vs. 41%, $P < 0.0001$). When recurrence is defined as the presence of HRL only, the FV surgery group had a longer mean time for recurrence (44.5 + 1.0 months) compared to the control group (30.4 + 1.6 months $P < 0.0001$).

Conclusion: The use of the fluorescence visualization during excision of oral carcinoma improves outcome.

10:54-11:02 *Multivariate Analysis of Factors Associated With Recurrence of Oral Squamous Cell Carcinoma* – J. Szudek, EDMONTON, AB

Learning Objectives

By the end of this presentation, the audience of otolaryngologists (attending or in-training) will be able to appreciate clinical and pathological factors associated with the recurrence of oral cavity squamous cell carcinoma.

Abstract #76

Background: Local recurrence is a major determinant in survival among patients with oral cavity squamous cell carcinoma.

Objectives: To identify and quantify clinical and pathological factors associated with local recurrence of disease among patients who underwent curative surgery and, if necessary, adjuvant radiation therapy for oral squamous cell carcinoma.

Methods: Between January, 1998 and March, 2007, 565 patients were diagnosed with oral squamous cell carcinoma through the Alberta Cancer Board. 434 of these patients underwent curative surgery and, if needed, adjuvant radiation therapy. A multivariate analysis was performed to determine which of the following factors was associated with local recurrence: demographics (including age and gender), laboratory values (including hemoglobin and blood transfusion requirements), oral cavity subsite and clinical and pathological stage (including T and N staging, margin status and local invasion).

Results: Local recurrence occurred in 93 of 434 patients. Factors found to be associated with local recurrence include: T-stage, blood transfusion and margin status. These associations are presented using Kaplan-Meier analysis and hazard ratios.

Conclusions: Our data suggest that several factors are associated with, and possibly prognostic for, local recurrence of oral squamous cell carcinoma.

11:10-11:18 *Expression of RAD51 as a Predictor of Response to Primary Chemo-radiation Therapy in Oropharyngeal Carcinoma* – D. Dalgorf, I. Poon, K. Higgins, et al. TORONTO, ON

Abstract #77

Background: Identifying biomarkers that predict treatment response is important for patient selection and tailoring specific therapy. RAD51 is an essential protein in homologous recombination DNA repair. Previous studies have suggested that over-expression of RAD51 increases cellular resistance to radiation and chemotherapy by increasing DNA repair efficiency.

Objectives: To determine whether over-expression of RAD51 is a poor prognostic indicator in patients with oropharyngeal squamous cell carcinoma (SCC).

Methods: RAD51 levels were quantified by immunohistochemistry in tissue samples from 25 patients with oropharyngeal SCC. All patients had stage III or IV disease, were treated non-operatively and completed 7 weeks of chemo-radiation therapy. Patients were retrospectively followed for a minimum of two years with endpoints being no evidence of disease, recurrence and death from disease.

Results: 25 patients have been identified for enrollment in this study. 16 patients had no evidence of disease, 6 were alive with disease and 3 were dead of their disease. Tissue specimens are currently undergoing immunohistochemical analysis.

11:18-11:26 *Utility of Endogenous Markers of Hypoxia in Head & Neck Cancer: Impact of Tumour HPV Status and CAIX Expression in Locally Advanced Head & Neck Squamous Cell Carcinoma (HNSCC)* – J. Dort, N. Brockton, H. Lau, et al. CALGARY, AB

Learning Objectives

At the conclusion of this presentation the listener will:

1. have a better understanding of the interaction between HPV and molecular markers of hypoxia;
2. understand the value of a targeted approach to the study of molecular markers in HNSCC;
3. learn about opportunities for further investigation in this important area of translational research.

Abstract #78

Background: HNSCC is the 5th most common cancer worldwide. Established risk factors include alcohol and tobacco use; however, Human Papilloma Virus (HPV) has emerged as a major risk factor for a subset of HNSCC. HPV+ tumours, although more advanced, appear to have a better prognosis, a difference that might reflect differences in tumour hypoxia. Tumour hypoxia is difficult to measure therefore endogenous markers of hypoxia (EMH) may be useful predictors of treatment response. EMH have not proved useful as predictors of outcome but prior research has not stratified tumours by HPV status.

Methods: A consecutive series of patients with locally advanced HNSCC were studied. Using p16 IHC as a surrogate for HPV status we quantified the levels of 2 candidate EMH: GLUT1 and CAIX.

Results: Tissue blocks from 59 patients were suitable for analysis. When tumour specimens were stratified by p16 status, low-CAIX / HPV- subjects enjoyed a 91% 1 year survival whilst high-CAIX / HPV- subjects had a 60% 1 year survival.

Conclusion: The increased prognostic performance of CAIX when stratified by p16 status (HPV surrogate) supports our hypothesis that HPV infection may modify EMH utility. The impact of EMH expression tumour stromal cells will be assessed further

11:26-11:34 *The Significance of Cancer Stem Cells in Head and Neck Cancer* – M. Prince, M. Clay, I. Ahmad, et al. ANN ARBOR, MI

Learning Objectives

1. By the end of the presentation the attendees will understand the concept of cancer stem cells and the current level of knowledge regarding cancer stem cells in head and neck cancer.
2. By the end of the presentation attendees will understand the importance of the cancer stem cell model of carcinogenesis to the treatment of head and neck cancer.

Abstract #79

Objectives: To review the current level of knowledge of cancer stem cells in head and neck cancer. According to the cancer stem cell hypothesis of carcinogenesis, only a small subset of cells within a cancer, known as cancer stem cells, are capable of forming tumors. Cancer stem cells have recently been identified in a number of solid tumors including head and neck squamous cell cancer (HNSCC). The cancer stem cells represent a critical population of cancer cells that are responsible for tumor growth, and may be responsible for metastasis and resistance to treatment.

Methods: Flow cytometry was utilized to isolate subpopulations of cancer cells from primary HNSCC and from HNSCC cell lines. The different cell subpopulations were assessed for tumorigenicity in a NOD/SCID mouse model.

Results: Cancer stem cells can be isolated from HNSCC using cell surface markers. These cells are capable of reproducing the original tumor while the other cancer cells are not. The cancer stem cells express genes associated with the stem cell phenotype.

Conclusions: Cancer stem cells can be isolated from HNSCC. Characterizing these cells more fully will allow for the development of more effective therapies directed against this critical subpopulation of cancer cells.

11:40-11:48 ***Definitive Management of Subglottic Stenosis: Cricotracheal Resection at VGH – T. Hartl, S. Durham, VANCOUVER, BC***

Learning Objectives

By the end of this session the resident or staff otolaryngologist will be able to:

1. explain the primary etiologies, pathogenesis and presenting features of adult subglottic stenosis (SGS);
2. describe cricotracheal resection (CTR) as it is performed at VGH in the treatment of adult SGS;
3. list patient and lesion characteristics that predict successful outcomes with early management using CTR.

Abstract #80

Objectives: 1. To review the VGH experience performing cricotracheal resection in the management of adult subglottic stenosis. Further, to review the literature and compare patient outcomes to those of published peers. 2. To determine whether there are patient and/or lesion characteristics that may help determine whether certain patients would benefit from earlier definitive management of subglottic stenosis.

Methods: This is a retrospective case review of 54 consecutive surgical procedures to treat adult subglottic stenosis at Vancouver General Hospital during the period 1998-2008.

Results: An idiopathic etiology is most common at VGH, followed by intubation trauma. The average McCaffrey grade of stenosis was 2.1, and patients had an average of 3.2 conservative procedures before CTR. In the 22 patient CTR cohort, there were 2 complications, 1 restenosis, and a 100% decanulation rate.

Conclusions: 1. CTR is most often performed at VGH as a revision procedure after multiple attempts with CO2 laser. 2. CTR has proven very successful at VGH, with results on par or exceeding peer institutions reporting in the literature. 3. CTR is well tolerated at VGH for patients with moderate subglottic stenosis, suggesting it may represent a first-line treatment for selected patients.

11:48-11:56 ***Retrospective Review of Treatment of Lentigo Maligna with Surgical Excision, Radiation Therapy and Carbon Dioxide Laser Ablation – L. Sowerby, C. Moore, H. Lee, et al. LONDON, ON***

Learning Objectives

1. To report on the success of carbon dioxide laser ablation in the treatment of lentigo maligna.
2. By the end of this session, the otolaryngologist will be familiar with the current treatment modalities for lentigo maligna at the London Regional Cancer Centre and their respective recurrence rates.
3. By the end of this session, the otolaryngologist will be aware of new adjuvantive treatments for lentigo maligna that are particularly useful when excision is undesirable.

Abstract #81

Objective: To compare the management of lentigo maligna with surgical excision, radiation therapy and carbon dioxide laser therapy at the London Regional Cancer Centre in London, Ontario.

Methods: Retrospective Review of all patients presenting to the London Regional Cancer Program with primary lentigo maligna from 1991-2005. Lentigo maligna melanoma cases were excluded from analysis.

Results: 75 cases of primary lentigo maligna were identified. 73 of these patients elected treatment as follows: 27 cases of surgical excision, 31 cases of radiotherapy, and 15 cases of laser ablation. Median follow-up times were 16.6 months for surgical excision, 46.3 months for radiotherapy, and 77.8 months for laser ablation ($p < 0.001$). Recurrence rates by treatment modalities were 1 in 24 patients (4.2%) for surgery, 9 in 31 patients (29.0%) for radiotherapy, and 1 in 15 (6.7%) for laser ablation. Although the trend displays lower recurrence rates for surgery and laser therapy compared to radiation, the results were not statistically significant.

Conclusions: This represents the largest case series with 5 year follow up of lentigo maligna treatment with carbon dioxide laser in the literature thus far. The results are supportive of this modality being included as a useful adjunct in the management of lentigo maligna.

**TUESDAY, MAY 12, 2009 - MORNING
HALIFAX A BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Special Workshop

07:00-08:00 *Strategies for Optimal Post-operative Care Following Endonasal Surgery*
CHAIRS: I. Witterick, TORONTO, ON F. Lavigne, MONTREAL, QC

Learning Objectives

By the end of this workshop, participants will be able to:

1. Assess scientific evidence regarding the role and use of saline nasal lavage post endonasal surgery.
2. Based on the evidence, determine the efficacy of specific saline nasal compounds.
3. Evaluate the advantages and disadvantages of different delivery systems available to deliver saline to the nasal cavity.
4. Cite current treatment options for post-operative nasal lavage.

Abstract #82

The post operative period following endonasal surgery is characterized by encrustation and weeping of the nasal mucosa - symptoms which require particular attention to prevent infection and the development of synechia which can compromise the functional result, and to also avoid causing discomfort to the patient. Lavage of the nasal fossae following surgery is an important part of post-operative care and is required to ensure complete healing.

In this 45-minute interactive workshop, we assess the key scientific evidence addressing the use of nasal saline lavage following endonasal surgery. Discussion will include treatment efficacy, symptom assessment (obstruction, bleeding, rhinorrhoea, itching and impaired sense of smell), ease of use/compliance and patient tolerability. Key study findings comparing different compounds with respect to epithelial regeneration, time to recovery, restoration of nasal function and mean number of follow-up examinations will be reviewed. Also addressed in this workshop will be the clinical efficacy and tolerability of different delivery methods (douche, irrigation, pulsed, spray or nebulizer) with specific attention paid to the merits of high versus low volume delivery methods, the risk of contamination with some types of devices, and the clinical utility of different devices in various populations.

Currently available nasal saline treatment options in Canada will be reviewed including the delivery method/type of applicator and preservative content. The discussion will be enhanced through a review of clinically relevant patient cases, the use of videos to illustrate the optimal use of saline nasal lavages in the post-surgical patient, and a Q & A period.

This symposium is supported by **SCHERING-PLOUGH** through a non-restricted educational grant.

**TUESDAY, MAY 12, 2009 - MORNING
HALIFAX A BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Workshop #10

08:00-09:00 *Fundamentals of Rhinoplasty* – S. M. Taylor, HALIFAX, NS

Learning Objectives

1. To review nasal analysis and esthetics.
2. To discuss approaches used in rhinoplasty.
3. To outline tip dynamics and to review commonly performed tip-plasty techniques.
4. Discuss nasal osteotomies and common nasal deformities.

Abstract #83

Objectives: To discuss basic rhinoplasty technique for residents and practicing otolaryngologists- head and neck surgeons.

Methods: An interactive workshop. The workshop will focus on pre-operative analysis, rhinoplasty approaches, tip maneuvers and management of the nasal dorsum. Complications of rhinoplasty will also be reviewed.

Results: The practicing physician should gain the knowledge required to perform uncomplicated rhinoplastic surgery and the course will serve as a framework for trainees in otolaryngology.

Conclusion: Rhinoplasty is commonly performed by the otolaryngologist- head and neck surgeon. The course will serve to review the basics of rhinoplasty and outline common techniques which can enhance results and patient outcome.

Workshop #11

09:00-10:00 *Perioperative Management of the Sinus Patient* – S. Kilty, OTTAWA, ON E. Wright, EDMONTON, AB

Learning Objectives

At the conclusion of this workshop participants should:

1. be able to effectively apply a variety of perioperative medical treatments to their patients with CRS;

2. be able to identify or categorise patient CRS disease severity and appropriate perioperative medical therapy;
3. develop an in-depth understanding into the pathophysiology of CRS and its impact on treatment.

Abstract #84

Background: Chronic rhinosinusitis (CRS) is an inflammatory disease which is primarily treated medically. Patients who fail maximal medical therapy become candidates for endoscopic sinus surgery. The medical management of these patients before, during, and after endoscopic sinus surgery is far from standardised and there is little guidance for the practicing otolaryngologist in the medical literature.

Objectives: To share with practicing otolaryngologists the available medical strategies and supporting evidence for managing the perioperative patient with CRS in order to maximize the operative outcome and disease control.

Methods: Using a panel of national experts in the field, individually, the evidence for management strategies such as perioperative systemic corticosteroids and antibiotics, intranasal corticosteroids, saline irrigation, topical antibiotic therapy, middle meatal stenting, and postoperative debridement will be discussed and reviewed.

Results: The attendees of the workshop should come away with a better understanding of the medical treatments that are available for use in the perioperative patient with CRS. The acquired knowledge will be immediately applicable to the attendees practice in the management of patients with CRS.

Conclusions: The attendee will leave the session with a greater knowledge of the medical therapies available for the perioperative management of the patient with CRS.

TUESDAY, MAY 12, 2009 - MORNING HALIFAX A BALLROOM MARRIOTT HARBOURFRONT HOTEL

Paper Session: RHINOLOGY

Chair: Dr. E. Wright, Edmonton, AB

10:30-10:38 *Virtual Endoscopy of the Nasal Cavity and Sinuses: A Correlation with Surface Anatomy of Sinonasal Pathology* – S. Anand, M. Kontolemos, R. Glikstein, et al. MONTREAL, QC

Learning Objectives

1. To present the novel technique of virtual endoscopy for the nasal cavity and paranasal sinuses.
2. To understand applications of virtual endoscopy as we enter the era of computer assisted surgery and simulation based medical training.
3. To characterize surface anatomy of sinonasal pathology using the virtual technique.

Abstract #85

Background & Purpose: Virtual endoscopy (VE) of the nasal cavity and paranasal sinuses is a new imaging modality that can complement conventional fiberoptic rhinoscopy for diagnosis, operative planning and education. The utility of VE to identify sinonasal pathology, however, yet requires systematic evaluation.

Methods: Volume rendering of computed tomography images will be completed to allow three-dimensional reconstruction for VE. Retrospectively, key anatomical and surface characteristics of 23 cases of proven sinonasal pathology will be analyzed to evaluate a possible relationship of VE features to specific disease entities.

Results: The VE images from the 23 cases were reviewed and various aspects of the virtual anatomy of the lesions were characterized, including location, size, shape and surface texture. Features of some noted pathologies were difficult to evaluate due to the lack of significant air surface interface.

Conclusions: VE has been shown to aid the evaluation of the surface anatomy of the nasal cavity and sinuses. Although VE alone has limitations in identifying characteristics of solid structures, the surface anatomy characteristics of lesions on VE may yield additional information improving preoperative assessment. Future work may also incorporate CT density characteristics to further delineate sinonasal solid structures with VE.

10:38-10:46 *Comparison of Objective and Subjective Methods for Monitoring Nasal Congestion During Nasal Challenge Testing* – R. Castano, M. Desrosiers, G. Theriault, et al. MONTREAL, QC

Learning Objectives

Upon completion of this presentation, participants will be able to describe methods used for monitoring changes in nasal patency during nasal challenge and to identify advantages and disadvantages of various monitoring modalities.

Abstract #86

Objective. To assess the correlation between acoustic rhinometry (AR) and anterior rhinoscopy (ARh) and visual analogue scale (VAS) for the assessment of changes in nasal congestion during nasal challenge testing with occupational agents.

Methods. 53 subjects with a history of work-related rhinitis symptoms underwent monitoring of nasal congestion by means of AR, Arh and VAS before and after challenge with a control and a specific active agent.

Results. No correlation was found between AR and VAS on both the control and active challenge day. The correlations between AR and ARh before the challenge on the control ($r = 0.39$, $p = 0.01$) and active ($r = 0.35$, $p = 0.01$) challenge days were significant but weak. Correlations between AR and ARh after the challenge with the control agent were weak. The correlation between AR and ARh over the first hour post-challenge with the active agent was significant and satisfactory ($r = 0.63$, $p = 0.01$).

Conclusion. The correlation between AR and ARh was weak assessing baseline nasal status but improved after the active challenge particularly during the early period.

10:46-10:54 *Genes Conferring Susceptibility to Staphylococcus Aureus Colonisation in Patients with Chronic Rhinosinusitis with Nasal Polyposis* – C. Cormier, L. Mfuna-Endam, M. Desrosiers et al. MONTREAL, QC

Abstract #86

Introduction: Staphylococcus Aureus (SA) has been implicated in the pathogenesis of chronic rhinosinusitis (CRS). However, host factors conferring susceptibility to SA colonisation remain unknown.

Purpose: We have previously identified associations between polymorphisms in TSLP and LAMB1 genes and SA carriage in patients with nasal polyposis (NP). We wish to extend these findings by performing a genome-wide association study with pooled DNA (pGWAS) to identify genes associated with SA carriage.

Method: 250 patients with NP have been prospectively recruited. We will perform a pGWAS comparing SA+ with SA – subjects using Illumina Human1M BeadChips.

Analysis: Populations with or without SA will be compared for allelic frequency differences for one million SNPs. High priority genes will be identified from top-ranked SNPs and validated by individual genotyping using additional tagging SNPs.

Conclusion: Identification of genes conferring susceptibility to SA colonisation will improve understanding of the role of SA in CRS and may allow development of new therapies.

11:00-11:08 *Endoscopic Frontal Sinusotomy Using Balloon Dilating Catheter: Outcome Study* – Y. Chan, C. Melroy, F. Kuhn, TORONTO, ON

Learning Objectives

At the end of the presentation, the audience will be able to:

1. appreciate balloon dilating catheter as a new instrument available for endoscopic sinus surgery;
2. understand the outcomes of frontal sinusotomy using balloon dilating catheter;
3. describe the different applications of balloon dilating catheter in frontal sinusotomy.

Abstract #87

Objective: To evaluate the outcomes of frontal sinusotomy using balloon dilating catheter and to determine the types of cases that are suitable for its application.

Methods: 40 frontal sinusotomies were performed in 27 patients over 2 years. Frontal sinus patency, length of follow-up, pre- and post-operative SNOT-20 and CT Lund-MacKay scores, revision rate, and case type were assessed.

Results: The mean follow-up is 10.4 months and the patency rate is 97.5%. The types of cases in which balloon catheters were used include primary and secondary frontal sinusotomy, management of frontal ostium stenosis, moving frontal cell walls within the frontal sinus, and identification of the frontal sinus ostium during standard endoscopic sinus surgery. 60% were hybrid cases performed with standard endoscopic ethmoidectomy while 40% were “balloon only”. 39 of 40 frontal sinuses were patent after 2 were revised (5%). Total SNOT-20 score improved from 38.8 to 19 ($p < 0.0001$) and Lund-MacKay scores improved from 10.1 to 5.1 ($p = 0.02$).

Conclusion: Balloon dilating catheters are new instruments that can be successfully used in a variety of scenarios during frontal sinusotomy. This study demonstrates the multitude of applications for the balloon in the frontal sinus and reports patency comparable to standard endoscopic frontal sinusotomy.

11:08-11:16 *CT Assessment of the Location of the Anterior Ethmoid Artery: Implications for Functional Endoscopic Sinus Surgery* – A. Knox, C. Diamond, R. Bhalla, et al. EDMONTON, AB

Learning Objectives

By the end of this session the participant will be able to:

1. identify the increased risk of injury associated with an unprotected AEA;
2. list anatomical features that are associated with an unprotected AEA;
3. Consider the importance of assessing a patient’s anatomy when presented with a CT scan prior to performing FESS;
4. locate the AEA on a coronal CT scan of the paranasal sinuses and appreciate the anatomical relationship between the height of the AEA exiting the orbit, the depth of the lateral lamella, and the course of the AEA canal relative to the skullbase;

5. Measure and interpret relationships between the height of the AEA exiting the orbit, the height of the lateral lamella, and the height of the AEA canal relative to the skull base to identify patients preoperatively on CT who are at increased risk for complications during FESS.

Abstract #88

Objectives: To determine anatomic relationships between the anterior ethmoid artery (AEA) and skull base to identify when the AEA may be at risk for damage during endoscopic sinus surgery (ESS).

Methods: A review of 75 computed tomography (CT) scans of paranasal sinuses was performed. Measurements were recorded including the height of the AEA exiting the orbit relative to anatomical landmarks, course of the AEA relative to the skull base, presence of pneumatization above the AEA and height of the lateral cribriform plate lamella (LCPL).

Results: In total, 150 AEAs from 75 CT scans were measured. The AEA was on or within 2mm of the skull base when leaving the orbit 59% of the time and unprotected off the skull base in 41%. LCPL height corresponded to Keros 2 or 3 classification in 46%. Mean LCPL height was marginally greater with an unprotected artery on the left, but not on the right.

Conclusion: By characterizing the relationship of the AEA to known landmarks, we may be able to preoperatively identify patients at risk of AEA injury during ESS. Unprotected arteries are common and trend towards association with depth of the LCPL. This highlights the importance CT scan assessment in preoperative planning.

11:16-11:24 *Novel Nasal Brushing Technique for Diagnosing Primary Ciliary Dyskinesia: Combined Prospective and Retrospective Study of 175 Specimen* – A. Mendelson, S. Abourbih, B. Chantal, et al. MONTREAL, QC

Learning Objectives

1. To overview PCD as a pathologic entity encountered by otolaryngologists.
2. To describe the diagnostic modalities and approaches available for PCD.
3. To introduce a novel nasal brushing technique as an effective method of obtaining ciliated epithelium for screening patients for PCD.

Abstract #89

Objectives: To assess the accuracy of a novel nasal brushing technique used at one university pediatric hospital for diagnosing Primary Ciliary Dyskinesia (PCD).

Methods: Combined prospective and retrospective review of five different diagnostic methods of PCD. 175 specimens, including 64 prospective new nasal brushings, were analysed under light microscopy. Specimens were considered adequate if ciliary motion could be classified as either normal or abnormal without the need for a repeat sample of mucosa. Statistical analysis was performed using the chi-squared test.

Results: Diagnostic yields for new and old nasal brushing techniques as well as adenoid, tracheal, and turbinate biopsies are 100% and 60%, 93%, 77%, and 13% respectively. The new nasal brushing technique was significantly superior to tracheal or turbinate biopsy as well as to the old brushing technique ($p < 0.001$); it was also superior to adenoid biopsy although less definitively ($p = 0.037$).

Conclusions: We introduce a very inexpensive readily available brush and a technique as an effective method of obtaining ciliated epithelium for screening patients for PCD. We reiterate the diagnostic algorithm, which includes assessment of ciliary motion under light microscopy prior to ultrastructural analysis.

11:30-11:38 *Barriers to Accessing Endoscopic Sinus Surgery* – V. Fenandes, A. Chiodo, TORONTO, ON

Learning Objectives

By the end of this session, the member will be able to consider the importance of endoscopic sinus surgery and its unique access concerns.

By the end of this session, the member will be able to appreciate the various factors that impede access to elective sinus surgery.

By the end of this session, the member will be able to analyze the need for further understanding of access to elective surgery.

Abstract #90

Background: The ability to access surgery prevents disease and restores health and function. Anecdotal evidence suggests that certain groups of patients are refusing elective sinus surgery. The purpose of this study was to assess characteristics and access factors that deter patients from surgery.

Methods: Patients with chronic sinusitis were recruited to complete a questionnaire as well as the SNOT-20. Patients who already had sinus surgery were compared with those who had not.

Results: 26 patients had undergone surgery while 18 patients had not. There were no differences between groups in terms of ability to speak English or work status. Age and ethnicity differed between groups, with more North American born, younger patients in the non-surgery group. The ability to afford medications post-operatively or to take time off work for surgery did not differ between groups.

Conclusions: Though ethnicity may play a role in sinus disease, there were no demonstrable differences between groups that would suggest barriers exist to accessing surgery. However, since patients across both groups reported difficulties in several access areas, it is likely that there are, in fact, barriers that are being overcome by some. Further qualitative study is recommended to describe the impact of these difficulties.

11:38-11:46 *Difference in Inflammatory Cells Infiltration in the Upper Airways of Obstructive Sleep Apnea* – F. Lavigne, M. Al-Samri, A. Evrard, et al. MONTREAL, QC

Learning Objectives

1. Identify the histologic manifestations of Obstructive Sleep Apnea.
2. Learn how this inflammation can influence the physiopathology of O.S.A.
3. Propose new research for therapy of O.S.A.

Abstract #91

It is now clear that inflammation of the upper airways is a feature of sleep apnea pathology. It has been suggested that controlling the inflammation in the nasal mucosa might affect the sleep quality. The objective of this study is to evaluate the inflammatory pattern in three anatomical sites within the same subjects.

Patients with obstructive sleep apnea consented to be biopsied at the inferior turbinate, nasopharynx, and uvula. Immunocytochemistry (ICC) was used to assess tissue inflammation and to phenotype the inflammatory cell infiltrate.

Biopsies from 30 patients with OSAS were obtained. The most predominant cells infiltrating the three sites were CD8 positive cells without any difference in their density. Macrophages were present in the three sites, they were more predominant in the uvula and nasopharynx compared to the inferior turbinates. Neutrophils were present in all sites but more predominantly in the inferior turbinates. Eosinophils were detected in inferior turbinates and nasopharynx, predominate in allergic patients, but were not detected in biopsies from the uvula.

There are significant differences in the distribution of inflammatory cells between the uvula and the inferior turbinate and nasopharynx that may eventually influence the therapeutic options of obstructive sleep apnea.

11:46-11:54 *Local Mucosal Flaps in the Management of Post-sphenoidotomy stenosis* – J. Lee, J. Nayak, A. Chiu. PHILADELPHIA, PA

Learning Objectives

1. To highlight etiologies which may lead to the development of post-sphenoidotomy stenosis despite traditional endoscopic sinus surgery.
2. To describe an endoscopic technique of preventing and managing post-sphenoidotomy stenosis.

Abstract #92

Background: Traditional endoscopic techniques at enlarging the natural sphenoid ostium is an effective procedure for the majority of sphenoid sinus disease. However, in the background of significant bony inflammation or infection, post sphenoidotomy stenosis can be a difficult long term problem to manage and treat.

Objective: To describe our technique of using local mucosal flaps in the management and prevention of post-sphenoidotomy stenosis.

Methods: This was a prospective study of patients undergoing our described procedure in the Division of Rhinology at the University of Pennsylvania. Patient etiologies, intra-operative findings, as well as long term sphenoid patency rates were recorded.

Results: We will first describe our technique of using local flaps in the prevention and management of post-sphenoidotomy stenosis (video). Indications for this procedure in our series of patients included sphenoid neo-osteogenesis and fungal mycetoma. This procedure resulted in decreased crusting in the post-operative period while achieving 100% long term patency rates.

Conclusion: The use of local mucosal flaps appears to be an effective technique at managing and preventing the development of post-sphenoidotomy stenosis.

**TUESDAY, MAY 12, 2009 - AFTERNOON
HALIFAX A BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Workshop #12

16:00-17:00 *Establishing an ENT Practice* – N. Longridge, M. Maharaj, VANCOUVER, BC
B. Rotenberg, LONDON, ON

Learning Objectives

Residents attending this seminar will learn to identify and assemble an appropriate team of advisory financial, insurance, and legal experts. They should further understand the role each of these experts will play on their "team".

Attendees will also gain an understanding of the extent and distribution of the expenses involved in establishing a new community ENT practice.

Abstract #93

Finally, they will learn a simple organizational breakdown of the business components of an ENT practice, along with the relevant details of each component that require customization to the needs of each individual practitioner.

The practical steps involved in making the transition from a learner to an independent practitioner have been traditionally inadequately taught in most residency training programs in Canada, including otolaryngology programs. In recent years, efforts have been made by various individuals to address this shortcoming within our specialty by offering seminars and talks from otolaryngologists and outside experts on a local or ad-hoc basis.

At last year's CSO meeting, the first part of a workshop series was presented to residents and others interested in establishing a new ENT practice in Canada, focusing particularly on decision-making with respect to choosing a practise type and location. This year, the next installment in the series will be presented, focusing on the business aspects of establishing an ENT practice.

Special Workshop #3

17:00-18:00 *Autoimmune Diseases for the Otolaryngologist*
CHAIRS: **E. Massoud & E. Sutton, HALIFAX, NS**

Learning Objectives

- Participants will be able to recognize early otolaryngologic manifestations of autoimmune disorders as well as the current evidence based treatment modalities.
- They will be able to test their knowledge in the interactive session and to share their expertise in diagnosis and management of autoimmune disorders.

Abstract #94

Autoimmune diseases have varied otolaryngologic presentations. These are frequently non specific and the patient will often be referred for various ENT symptoms to the otolaryngologist who may be the first health care provider to make the diagnosis.

Otolaryngologists need to be familiar with the diagnosis and management of autoimmune diseases and work with the rheumatology-immunology colleagues in the continuing management of these patients.

Dr. Evelyn Sutton is Professor of Rheumatology at Dalhousie University with vast experience in autoimmune diseases. She will give a 20 minute talk about the topic. This will then be followed by an interactive discussion of several cases of special interest to the Otolaryngologist.

This symposium is supported by **GLAXOSMITHKLINE** through a non-restricted educational grant.

TUESDAY, MAY 12, 2009 - MORNING
HALIFAX BC BALLROOM
MARRIOTT HARBOURFRONT HOTEL

Workshop #13

08:00-09:00 *Intra-glandular Botulinum Toxin (IG-BTX) and Major Ducts Clipping for Management of Salivary Control in Children: Together and Head to Head – H. El-Hakim, EDMONTON, AB S. Daniel, MONTREAL, QC*

Learning Objectives

The participants will be able to:

1. acquire a working knowledge of both methods and their scientific rationale;
2. learn the “bottom line” of current evidence on the subject;
3. discuss current interests in quality of life research and debates regarding safety profile.

Abstract #95

Objectives: There is a plethora of literature on management of saliva incontinence (drooling, and aspiration) in children. However there are no clearly specified indications for individual interventions, despite the variation in invasiveness. Whereas the latter aspect is especially associated with the deeper rooted methods (gland excision, re-routing of ducts, tracheostomy and laryngo-tracheal separation), the more recently introduced interruption of ducts and botulinum toxin injections are reportedly better tolerated by the children and accepted by the parents. There is also increased interest in demonstrating the response of interventions in terms of quality of life improvement, and identifying limits of safety for patients.

Method: Two pediatric otolaryngologists will perform a -

- systematic literature reviews of the effectiveness and morbidity of IG-BTX and major ducts interruption;
- review of techniques and scientific basis;
- debate on indications proposed .

Results: IG-BTX and major ducts clipping are the most recent introductions in the repertoire of the pediatric otolaryngologist for managing salivary incontinence. They are both easy to learn, and required resources for them are available widely. Potential tools for assessing treatment impact on the quality of life in children will be discussed.

Conclusion: The audience will learn the attributes of two minimally invasive approaches for improving saliva control.

Workshop #14

09:00-10:00 *Ossicular Reconstruction Using Otomimic* – N. Longridge, VANCOUVER, BC

Learning Objectives

By the end of the session the occasional ossicular reconstructionist will be able to understand the place for Otomimic in ossicular reconstruction, the likelihood of improved hearing success with this method compared to results previously existing in the literature and in the experience of the presenter.

Abstract #96

Ossicular reconstruction despite appearing simple in the hands of experts frequently results in persisting air bone gaps at a level where the patient's satisfaction is less than optimal. Use of ossicular reconstruction material, such as TORPS, PORPS and Applebaum prostheses, despite their apparent effectiveness, frequently does not produce a maximal hearing gain.

Otomimic is a hydroxyapatite crystal which can be mixed, applied to the ossicular defect, and allowed to harden, restoring continuity between the tympanic membrane and the stapes. It has a place in incudostapedial joint reconstruction, direct myringostapedioplasty, and fixing a loose stapes prosthesis, either because it cannot be crimped tight enough, or if the long process of incus has necrosed. Dramatic hearing gain can be achieved with significant reliability when compared to literature results for other methods of attempting the same thing.

**TUESDAY, MAY 12, 2009 - MORNING
HALIFAX BC BALLROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: OTOLOGY 2

Chair: Dr. J. Chen, Toronto, ON

10:30-10:38 *Wow! ... But Not Now! The Value of an Extended Pre-operative Trial of Device Prior to BAHA Surgery: Preliminary Finding* – D. Morris, R. Pennings, M. Gulliver, HALIFAX, NS

Learning Objectives

The audience will be able to understand that there may be an initially exaggerated reaction to a first trial of BAHA. This first impression may be prone to emotional colouring and may not reflect their impression of device performance after a more prolonged and representative trial during everyday wear. The authors urge caution before rushing into BAHA surgery on the basis of a one off office trial. An extended preoperative trial is our preference.

Abstract #97

Objectives: The Bone anchored hearing aid (BAHA) is an established means of auditory rehabilitation. During the preoperative audiological assessment, candidates are encouraged to try the device snapped to a headband. The realization that BAHA can bring about hearing where perhaps it was thought there was none, is an astonishment to many patients, producing what we call the 'Wow Factor'. We are aware that sound-field testing in the audio booth is not reflective of real life experience. We each place very different demands on our hearing and as such we are keen that patients are able to take the BAHA home for a prescriptive trial while undertaking daily activities.

Methods: Data are collected prospectively from all new BAHA candidates. Impressions of satisfaction are documented at first exposure to the device (Wow Factor) and after a 2 week trial the patient has an opportunity to declare 'Not Now' if the BAHA has failed to live up to its initial expectations.

Results: The impact of the trial on cases proceeding to surgery is presented.

Conclusions: We propose an extended preoperative trial as a necessary enhancement of the consenting process and as an aid to case selection, that will mitigate against post-operative dissatisfaction and non-compliance

10:38-10:46 *Quality of Life Improvement for BAHA Users and Their Partners* – M. McNeil, M. Gulliver, D. Morris, et al. HALIFAX, NS

Learning Objectives

1. To review the indications for bone anchored hearing aids.
2. To review evidence regarding functional improvements seen by BAHA recipients.
3. To understand the importance of considering a hearing impaired person's partner when considering the functional improvement potential of a BAHA.

Abstract #98

Background: Patients receiving a bone-anchored hearing aid (BAHA) have well documented improvements in their quality of life and audiometric performance. An equally important measure of success is the effect of BAHA provision on their partners. While hearing-aid recipients may understate their functional improvement, partners may be more aware of these quality of life improvements. No previous study has investigated partner perception of functional improvements with the use of a BAHA.

Methods: Surveys were sent to 153 adult patients who received a BAHA through the Nova Scotia BAHA Program. The survey included a modified Hearing Handicap Inventory for Adults (HHIA), which asked partners of BAHA recipients to give their subjective impression of the BAHA recipient's functional status before and after use.

Results: To date, 65 patients (42.5%) have completed and returned surveys, of which 53 reported having a partner. When a baseline functional deficit was present, partners reported functional improvement in 81.2% of situations, no change in 15.2%, and a decline in 3.6%. 97.7% of partners reported improvement in at least one functional domain.

Conclusions: Early findings demonstrate a significant improvement in the perceived emotional and social effects of hearing impairment, as perceived by BAHA recipients' partners.

10:46-10:54 *BAHA et anacusies unilatérales: bénéfice réel ou fictif ?* – M. Nader, F. El Fata, T. Leroux, et al.
MONTREAL, PQ

Learning Objectives

À la fin de la session, les résidents ainsi que les spécialistes en oto-rhino-laryngologie pourront décrire trois méthodes utilisées pour évaluer l'impact audiologique des BAHAs.

À la fin de la session, les résidents ainsi que les spécialistes en oto-rhino-laryngologie comprendront comment le BAHA diminue l'handicap auditif chez les patients souffrant d'une anacusie unilatérale.

Abstract #99

Objectifs : Évaluer l'intérêt du BAHA dans les anacusies unilatérales en considérant l'impact de la prothèse sur la qualité de vie des patients

Méthodes : Vingt-deux patients ayant une anacusie unilatérale et une bonne audition du côté controlatéral ont été opérés d'un BAHA du côté atteint.

La qualité de vie des patients a été mesurée par le questionnaire APHAB rempli par les patients avant la mise du BAHA et six mois après son utilisation. La localisation du son a été mesurée en demandant aux patients d'identifier la source d'un son émis d'une manière aléatoire par un des dix haut-parleurs qui les entourent, avec et sans bruit masquant. L'intelligibilité dans le bruit a été mesurée avec et sans BAHA grâce au test de HINT. L'outil statistique utilisé est l'analyse de la variance.

Résultats : Les patients ne sont pas capables de localiser correctement le son avec le BAHA. On retrouve une tendance à une amélioration de la qualité de vie après 6 mois d'utilisation. L'intelligibilité dans le bruit est améliorée si la source de parole est en regard de l'oreille saine ou du BAHA et si la source du bruit est séparée dans l'espace de celle de la parole

Conclusions : Le BAHA implanté du côté anacusique diminue l'handicap auditif des patients, offre une audition pseudo-bilatérale et améliore leur qualité de vie..

10:54-11:02 *Differences in Hearing Perception Between Patients with Unilateral Conductive Hearing Loss Treated with Ossicular Chain Reconstruction and Bone-anchored Hearing Aid* – J. Yu, J. Dumper, B. Hodgetts, et al.
EDMONTON, AB **WITHDRAWN**

Learning Objectives

1. To learn that perception of hearing improvement after bone-anchored hearing aid implantation (BAHA) for unilateral conductive hearing loss is comparable to successful ossicular chain reconstruction.

2. To learn that unilateral conductive hearing loss is a potential indication for BAHA.

Abstract #100

Objective: To determine if patients with unilateral conductive hearing loss (UCLH) perceive as much hearing improvement after bone-anchored hearing aid (BAHA) implantation as those who have had successful ossicular chain reconstruction (OCR).

Methods: Institutional ethics approval was obtained for this project. We undertook a retrospective chart review of patient who had undergone either BAHA or OCR for UCLH. Patients received audiograms pre and post-operatively. Patients with OCR were selected based on successful closure of the air-bone gap to within 10 dB, so that the post-op audiograms were comparable to patients with BAHA. Perception of hearing improvement was determined by applying the Speech, Spatial, and Qualities of Hearing (SSQ) questionnaire to both groups, as well as the Abbreviated Profile of Hearing Aid Benefit (APHAB) questionnaire to the BAHA group.

Results: 10 patients who had received BAHA for UCLH were compared to 10 patients who had undergone successful OCR. The scores on the SSQ for both groups post-operatively were very similar. The BAHA group showed significant improvement on the APHAB.

~~Conclusion: Patients with UCHL have similar perception of hearing improvement following BAHA implantation and successful ossicular chain reconstruction. This provides support for BAHA as a viable management option for UCHL.~~

11:10-11:18 ***Otologic Surgical Simulation Using Rapid Prototyped Temporal Bones*** – J. Hochman, S. Symons, J. Mainprize, et al. TORONTO, ON

Learning Objectives

1. By the end of the presentation the audience will have been exposed to several methods of surgical simulation of the temporal bone.
2. By the end of this session the audience will understand the process of creating a high fidelity temporal bone model.
3. By the end of this session the audience will be able to decide on the merits of creating a photo-printing derived temporal bone for both preoperative planning and trainee skill acquisition.

Abstract #101

Objective: Our study aims to create a high fidelity temporal bone model (HFTBM) from a CT dataset utilizing rapid prototyping.

Background: The ability to create a patient specific artificial temporal bone would facilitate a paradigm shift in otologic surgical planning. This may also serve as an alternative to classic cadaver-based education. Individual temporal bones possess considerable variability in both normal and pathologic structures. A high fidelity model would allow surgical trainees direct preoperative hands on experience with an individual's internal constructs correlated to CT images. This learning archetype will significantly augment resident appreciation of approach and mechanisms to prevent an adverse outcome.

Method: Cadaveric CT images were imported to a 3D image processing program for segmentation. The segments were then exported to a steriolithography format file to facilitate photo-printing using a Fused Deposition Modeling printer.

Results: The HFTNM could be handled using conventional surgical instruments, in the same manner as a cadaver bone during dissection. Limitations in both ossicular realism as well as in non-osseous structures were encountered.

Conclusion: This model serves as an excellent replica of a human temporal bone and can facilitate trainee skill-set acquisition and possibly preoperative surgical planning.

11:18-11:26 ***Evaluation of Growth and Hearing in Intracanalicular Vestibular Schwannoma*** – R. Pennings, D. Morris, L. Clarke, et al. HALIFAX, NS

Learning Objectives

By the end of this presentation the audience will be able to describe the percentage of growth and deterioration of hearing in patients with a purely intracanalicular vestibular schwannoma and to correlate these findings with the literature.

Abstract #102

Objectives: The literature is controversial on whether intracanalicular vestibular schwannomas (iVS) grow or not. This study evaluates growth and deterioration of hearing in iVS.

Methods: Size, sublocalization and hearing were evaluated by repeat MRI-scanning and pure-tone and speech audiometry in 48 patients, all with unilateral iVS. Significant growth of tumor was defined as an increase in size of more than 2 mm between the first and last MRI-scan.

Results: Patients had a median follow-up of 3.4 years. Growth was seen in 42% of the patients, 52% were stable and three patients (6%) demonstrated shrinkage. Median growth rate for all iVS was 0.4 mm/year, 1.8 in growing, 0.0 in stable and -1.1 mm/year in shrinking tumors. Nine patients (19%) eventually required intervention. Pure-tone average and word recognition score both significantly deteriorated in all patients from 38 dB to 53 dB and from 66% to 51%, respectively. There was no significant difference between growing, stable or shrinking tumors regarding deterioration of hearing. Hearing was significantly better in patients with a fundus iVS than in those with a central iVS.

Conclusions: This study shows that intracanalicular vestibular schwannomas may grow and that a close follow-up is warranted in specialized skull-base clinics.

11:26-11:34 ***The Incidence of GJB2 Mutations in Adult Cochlear Implant Candidates with a History of Early Onset Hearing Loss*** – J. Hochman, T. Stockley, V. Lin, et al. TORONTO, ON

Learning Objectives

1. At the end of this presentation the audience will be able to describe different causes of familial hearing loss and have a schema for their categorization.
2. At the end of this presentation the audience will be able to appreciate what is required to test an individual for connexin associated hearing loss.
3. At the end of this presentation the audience will be aware of the incidence of GJB2 mutations in a population of adult patients with a history of early idiopathic or hereditary progressive bilateral severe sensorineural hearing loss.

Abstract #103

Objective: To assess the incidence of GJB2 mutations in a population of adult patients with a history of either early idiopathic (perilingual onset with no family history or obvious etiology) or hereditary progressive (progressive early onset, with familial association) bilateral severe sensorineural hearing loss.

Background: Significant efforts have been applied in defining the epidemiology of Connexin 26 associated hearing impairment in the pediatric population, yet the issue remains ambiguous for adult patients. Causation is important as there are implications to prognosis, risk of associated medical manifestations, and for genetic counselling.

Patients: Adult patients meeting criteria for cochlear implantation with early onset hearing loss - November 2007 onward.

Intervention: Sequencing of the GJB2 gene exons on DNA isolated from peripheral leukocytes.

Results: Forty seven patients were analyzed for GJB2 mutations. Five patients (10.6%) had biallelic GJB2 mutations confirming GJB2-related origin of the hearing impairment. Five additional patients had either one known mutation (1 patient), or one (3 patients) or two (1 patients) variants of unclear significance. Four additional patients were found to be monoallelic for Pendred Syndrome associated mutations.

Conclusion: The incidence of GJB2 related hearing impairment in an adult population with early onset idiopathic severe sensorineural hearing loss is significant, with a yet to be defined incidence.

11:40-11:48 ***Vestibular Evoked Myogenic Potential (VEMP) Abnormalities in Patients with Visual Vestibular Mismatch – D. MacNeil, A. Mallinson, J. Galo, N. Longridge, VANCOUVER, BC***

Abstract #104

Background: Visual vestibular mismatch (VVM) is a symptom set generated by incongruity between visual and vestibular signals. The development of VVM may be caused by otolithic pathology. VEMPs have recently been found to measure otolithic function. We hypothesized that there will be a higher degree of VEMP abnormalities in patients with VVM.

Methods: Prospective study of fifty patients referred with vestibular complaints to a tertiary care ambulatory referral centre. Patients were divided into two groups: positive history for VVM and negative history for VVM. All patients underwent standard vestibular assessment, including caloric, posturography, subjective visual vertical and VEMP testing. Presence of VVM symptoms will be correlated with VEMP findings.

Results: Preliminary results indicate that there is a difference in VEMP abnormalities between patients with VVM symptoms and those without VVM symptoms.

Conclusions: Our results indicate that patients with visual vestibular dysfunction have otolithic dysfunction that is measurable by VEMPs.

11:48-11:56 ***Reproducibility of VEMP with a Novel Pressure Feedback Method – W. Qian, J. Adamonis, H. Wu, et al. TORONTO, ON***

Learning Objectives

The vestibular evoked myogenic potentials (VEMP) is one of the objective assessment of the vestibular function. However, the literatures have found that the values of the P1-N1 amplitudes have a great variability, which is highly dependent on the strength of the voluntary sternocleidomastoid (SCM) contraction. The present study is introducing a novel method in standardizing the SCM contraction level by using a pressure feedback during VEMP measurement and the reproducibility of the P1-N1 amplitudes with the novel technique.

Abstract #105

Objective: To test the reproducibility of a novel method for obtaining vestibular evoked myogenic potentials (VEMP).

Methods: Six normal hearing adult males (mean age 38.8±7.6 years) were tested. While in a sitting position subjects were instructed to put their chin on a customized rubber pressure manometer that was attached to the top of a chin rest. They exerted a downward pressure of 120 mmHg (indicated on the pressure gauge) while a 95 dB click stimulus was applied to the ear. The ipsilateral VEMP (recorded from sternocleidomastoid-forehead) was the averaged result of at least 100 stimulus presentations. The procedure was repeated weekly in three consecutive weeks. The latency of P1 and N1, and the P1–N1 peak-to-peak amplitude were measured after each trial.

Results: One-way ANOVA for repeated measures indicated there was no significant difference in P1 latency, N1 latency and P1–N1 amplitude over the weekly trials (all p>0.05). Furthermore, there was no left-to-right difference in those 3 VEMP measurements (paired t-test, p>0.05). The mean overall P1 and N1 latency was 14.4±1.1 ms and 24.4±1.4 ms respectively, and the mean overall P1-N1 amplitude was 61.6±28.2 µV.

Conclusions: A highly reproducible VEMP can be obtained using the pressure feedback method.

**TUESDAY, MAY 12, 2009 - MORNING
ACADIA ABC ROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: HEAD AND NECK SURGERY 2

Chair: Dr. J. Harris, Edmonton, AB

08:00-08:08 *Waiting for Thyroid Surgery: A Prospective Cohort Study of Psychological Morbidity and Determinants of Health Associated with Long Wait Times for Thyroid Surgery* – A. Eskander, N. Chauhan, K. Higgins, et al.
TORONTO, ON

Learning Objectives

By the end of this presentation, CSO members and guests, will:

1. have a better understanding of the level of anxiety associated with a long wait-time for thyroid surgery and the effect of surgery on post-operative anxiety;
2. be able to predict those patients that will be at higher risk of greater anxiety due to various sociodemographic and determinant of health factors;
3. appreciate the length of the wait for this head and neck procedure at Toronto teaching hospitals and compare this to the targets set by the Ministry;
4. understand patient opinion around the appropriate length of wait for thyroid surgery.

Abstract #106

Most of the detail surrounding an exact diagnosis of thyroid cancer and long-term prognosis can only be determined at the time of surgical excision of the gland. This study looks to determine the degree of stress and anxiety in patients waiting for thyroid surgery and assessing to see if the degree of anxiety is related to the length of time on the waiting list, income, education, employment or place of birth. This was a prospective cohort study assessing patients both pre and post operatively. A modified Dillman approach was used to mail out the packaged which included a sociodemographic questionnaire and 4 psychological morbidity questionnaires: IES-R, IIRS, PSS and HADS. The 4 psychological morbidity questionnaires were also readministered to patients at their first follow up visit post-surgery but before meeting their surgeon and learning of their final pathology results. This is an ongoing study and these are only preliminary results. After the first reminder we had a 40% response rate (n = 36) and 8 of these patients were followed up post-thyroidectomy. Patients experience the greatest anxiety within the first month and after four months from the date of decision to operate. They experience minimum anxiety between 2 and 4 months from the date of decision to operate. Patients are dissatisfied with their wait and identify that the appropriate wait time should be within 1 month of the date of decision to operate. Anxiety decreases significantly post-operatively.

08:08-08:16 *Where are the Men with Thyroid Cancer?* – S. Hall, H. Walker, A. Schneberg, KINGSTON, ON

Learning Objectives

At the end of this presentation the attendees will understand the relationship between the rising incidence of cancer, the rising incidence of subclinical cancer and the rising rate of diagnostic imaging.

Abstract #107

Background: Autopsy studies have consistently shown that the incidence of occult thyroid cancer is the same in men as women yet the clinical incidence is 3:1. Our previous research has shown that the increasing incidence of thyroid cancer is due to the detection of subclinical cancers in women.

Method: We compared the incidence of thyroid cancer by gender to the rate of neck imaging (CT, MRI and U/S) in Ontario between 1993 and 2006.

Results: Women had 2.5 times the number of imaging tests and an increasing number of tests.

Conclusion: The incidence of thyroid cancer in men is lower and not increasing because they have fewer diagnostic tests. The impact of this observation on our understanding of the natural history of thyroid cancer will be discussed.

08:16-08:24 *Body Mass Index in the Evaluation of Thyroid Cancer Risk* – T. Mijovic, J. How, M. Pakdaman, et al.
MONTREAL, PQ

Learning Objectives

By the end of the lecture, the audience will be able to:

1. describe the impact of weight and body mass index on the risk of thyroid malignancy in a population of patients with thyroid nodules and an indeterminate pre-operative FNAB diagnosis;
2. appreciate the different links between BMI and risk of thyroid malignancy depending on patients' age and gender;
3. understand the potential roles of sex hormones in thyroid carcinogenesis.

Abstract #108

Objective: Evaluate the impact of body mass index (BMI) on thyroid cancer risk.

Design: A total of 253 consecutive patients with indeterminate thyroid nodule cytology on fine-needle aspiration biopsy (FNAB) who underwent thyroidectomy in a teaching hospital between 2002 and 2007 were reviewed. Height and weight from the

anaesthesia summary were recorded for each patient. Malignancy rates were calculated for the underweight, normal, overweight and obese groups according to the BMI with subanalyses according to age and gender.

Results: The risk of malignancy tended to be lower in obese patients compared to patients with BMIs in the non-obese ranges (52% vs 61%, $p=0.195$.) Females older than 45 years were the only subgroup where higher malignancy rates were linked to obesity (65% vs 54%, $p=0.293$.) When excluding older females, the rate of malignancy in obese patients was 36% versus 70% in non-obese patients ($p=0.002$) with an associated reduction of 5% in the risk of malignancy per increased unit of BMI.

Conclusions: For patients with FNAB results of indeterminate significance, a higher BMI correlates with lower rates of thyroid malignancy for all patients except females over the age of 45 for which a higher rate of carcinoma is associated with obesity.

08:24-08:32 *The Relationship Between Thyroid Stimulating Hormone and Thyroid Cancer: A Retrospective Review of 504 Patients* – R. Ywakim, M. Pakdaman, J. How, et al. MONTREAL, QC

Learning Objectives

1. By the end of this session, the otolaryngologist will be able to describe the consensus found in the available literature on serum thyrotropin and its relationship to thyroid cancer.
2. By the end of this session, the otolaryngologist will be able to consider the results of a study of 504 patients when given the results.
3. By the end of this session, the otolaryngologist will be able to value the possible role of serum TSH concentration at presentation and its potential use as an adjunct in predicting the risk of thyroid malignancy in patients presenting with thyroid nodules.

Abstract #109

Objectives: Serum thyrotropin (TSH) is a known thyroid growth factor. We aim (1) to compare preoperative serum TSH among patients with documented well differentiated thyroid carcinoma versus patients with benign disease and (2) to assess for a specific relationship between TSH and papillary microcarcinoma (PMC).

Methods: We reviewed 504 patients who underwent total thyroidectomy in Montreal, Canada at a McGill University teaching hospital between 2002 and 2007. Diagnostic outcome was determined by final pathology of the thyroidectomy specimen. Values were compared using the chi-squared test.

Results: Higher rates of malignancy were observed in patients with TSH levels in the upper limits of the normal range. The incidence of malignancy was 45.5% in patients with serum $0.4 \leq \text{TSH} < 0.8$ mIU/l ($p < .001$) versus 57.2% for those with $0.8 \leq \text{TSH} < 1.4$ mIU/l ($p = 0.055$) and 66.5% for those with $1.4 \leq \text{TSH} < 4.0$ mIU/l ($p < .001$). Tumor size was not found to increase in parallel with TSH concentrations.

Conclusions: This study demonstrates that the risk of malignancy in thyroid nodules increases in parallel with higher serum TSH concentrations; this occurs within the normal range. Further studies are necessary to assess for the predictive value of this association.

08:40-08:48 *A Prospective Evaluation of Perioperative Concern Amongst Patients Considering Thyroidectomy* – M. Brandt, J. Franklin, K. Fung, et al. LONDON, ON

Learning Objectives

At the completion of the presentation attendees will have an improved understanding of the areas of concern experienced by patients considering thyroidectomy.

Attendees will become familiar with a novel assessment tool evaluating patient perioperative concerns.

At the completion of the presentation, attendees will be able to direct their perioperative counselling to include the areas of greatest concern experienced by patients considering thyroidectomy.

Abstract #110

Objectives: Patients considering surgery face many uncertainties and concerns. This investigation sought to develop an objective assessment tool for characterizing the areas of greatest concern amongst patients considering thyroidectomy.

Methods: As part of validating a clinical measure concerning perioperative concerns, patients presenting with a thyroid nodule amenable to surgery (hemi- or total-thyroidectomy) were voluntarily recruited. Those with lesions necessitating total-thyroidectomy were excluded. 21 individuals completed a novel 17-item questionnaire during their initial clinical visit and again 3-days later. Outcomes included descriptive statistics and test-retest reliability.

Results: Top areas of concern included the risk of: cancer, a surgical complication, a change in voice, and a delayed return to work. Areas of minor concern included the risk of being embarrassed by one's condition, being judged, or not having their questions answered. Overall agreement for responses was 55% with an interclass correlation of 0.86.

Conclusions: Patients considering thyroidectomy have concerns that remain stable in the early preoperative period requiring surgeon-initiated inquiry and counsel. This is the first study to evaluate preoperative patient concerns, and initially establishes the Western Inventory of Surgical Concern – Thyroid (WISC - T) as a means of ensuring adequate patient counselling and a method of

evaluating perioperative patient education.

08:48-08:56 ***Ketorolac in Thyroid Surgery: Is the Risk of Hematoma a Reality?*** – C. Chin, J. Franklin, B. Turner, et al.
LONDON, ON

Learning Objectives

By the end of this presentation the otolaryngologist will be able to interpret the increased risk of hematoma in thyroid surgery with the use of Ketorolac.

By the end of this presentation the otolaryngologist will be able to describe the mechanism of action of Ketorolac.

By the end of this presentation the otolaryngologist will be able to consider the narcotic sparing effect of Ketorolac in the setting of Thyroid surgery.

Abstract #111

Post-operative hematoma is a potentially life-threatening complication of thyroid surgery. Ketorolac (Toradol, Roche Laboratories) is a non-steroidal anti-inflammatory (NSAID) that can be used as an alternative to narcotics in pain management however, ketorolac has known antiplatelet activity and has been shown to increase bleeding time. Several studies have indicated that ketorolac increases the likelihood of post-operative hemorrhage in surgery. No Study has characterized the risk of bleeding with Ketorolac in thyroid surgery.

Methods: Retrospective chart review of consecutive thyroidectomies from 2002 to 2007. Statistical analysis by Fisher's Exact test.

Results: 760 consecutive thyroidectomy patient charts were reviewed. 12 hematomas were identified of which 5 patients received Ketorolac (42%). By contrast, the rate of Ketorolac use in thyroidectomy patients was only 23%. (p=0.118). The conditional maximum likelihood estimate Odds Ratio was 2.425. The Etiologic fraction in the population receiving Ketorolac was 58.82% as compared to 24.51% in the population who did not receive Ketorolac.

Conclusions: There was a significant trend toward hematoma in patients who received Ketorolac as an analgesic for thyroid surgery. The difference did not achieve statistical significance due to the rarity of the event. There was significantly less narcotic utilized in the Ketorolac group.

08:56-09:04 ***Hashimoto's Thyroiditis as a Risk Factor for Post-thyroidectomy Hypocalcemia*** – O. Neaga, N. Sands, V. Cote, et al. MONTREAL, PQ

Learning Objectives

By the end of this session the student will learn the steps involved in approaching a new clinical project, a simple dichotomous trait analysis.

Abstract #112

From the presented research they will be more aware of the potential complications that accompany total thyroidectomy surgery (hypocalcemia) and will be able to identify patients at risk (inflammatory thyroid conditions such as Hashimoto's thyroiditis) for such complications with the intent of preventing post-operative medical complications.

Objective: To determine whether Hashimoto's thyroiditis is a risk factor for post-thyroidectomy hypoparathyroidism leading to hypocalcemia.

Materials and methods: A retrospective study looking at 191 female patients who had undergone total thyroidectomy from October 2004-December 2006. Patients were divided into three groups: Hashimoto (n=43), chronic lymphocytic thyroiditis (CLT) (n=53) and non-inflammatory disease (n=95). Hypocalcemia was defined as a total serum calcium \leq 1.90 mmol/L. The diagnosis of inflammatory thyroid disease was based on pathology reports. Data analysis was performed using t-test analysis.

Results: PTH levels in the Hashimoto group were significantly lower from the non-inflammatory group (31.27 vs 40.89 ng/L, p=0.018; 27% vs 14% hypocalcemics). There was no significant difference between CLT and non-inflammatory groups (37 vs 40.89 ng/L, p=0.17; 22% vs 14% hypocalcemics). PTH levels were significantly lower in the Hashimoto vs non-Hashimoto groups (31.27 vs 39.41ng/L, p=0.029).

Conclusions: We have previously shown that female gender poses a two-fold increased risk factor when assessing for post-thyroidectomy hypocalcemia. We speculated that this could be in part due to a higher prevalence of auto-immune disorders in females compared to males. The current study suggests that Hashimoto's thyroiditis is a significant pre-op risk factor for post-thyroidectomy hypocalcemia.

09:10-09:18 ***Lymph Node Metastasis in Thyroid Papillary Microcarcinoma: Study of 101 Ppatients*** – R. Varshney, M. Pakdaman, M. Hier, et al. MONTREAL, QC

Learning Objectives

By the end of the session, the audience will:

1. be able to appreciate the prevalence of papillary microcarcinoma of the thyroid (PMC);
2. be able to describe certain histopathological characteristics of PMC associated with LN metastasis.

Abstract #113

Objectives: Papillary microcarcinoma (PMC) has been described by some authors as a variant of normal and others as a serious malignancy. We aim to describe our experience with PMC and lymph node metastases.

Methods: Consecutive total thyroidectomies at a McGill University teaching hospital from 2002 to 2007 for PMC were reviewed. Cases where lymph nodes (LN) were found in the specimen were selected. Patients with any concomitant malignancy other than PMC were excluded (n=101). PMC characteristics assessed included extrathyroidal extension, multifocality, and bilaterality. Statistical significance was calculated using Fisher's exact test.

Results: When reviewing PMC in our 101 cases, multifocality was found in 54 cases (53.4%), bilaterality in 29 and (28.8%), and extrathyroidal extension in 19 (18.8%). 5 cases (4.95%) were found to have LN metastasis, of which PMC was multifocal in all 5 cases (p=0.042), 4 were bilateral (p=0.023), and in 4 cases PMC showed extrathyroidal extension (p=.004).

Conclusions: 4.95% of the papillary microcarcinomas in our surgical series showed lymph node metastases. LN metastases were found to be associated with multifocality, bilaterality and extrathyroidal invasion.

09:18-09:26 ***Sentinel Lymph Node Biopsy in Papillary Thyroid Cancer: Is There a Role?*** – S. Anand, R. Payne, M. Hier, et al. MONTREAL, PQ

The management of the central compartment (CC) in papillary thyroid carcinoma (PTC) is controversial. An adoption of routine CC dissection is not currently standard management, partly due to the risks of recurrent laryngeal nerve injury and hypoparathyroidism.

Abstract #114

Objectives: To determine whether sentinel lymph node (SLN) biopsy (SLNB) can accurately predict CC metastasis in PTC.

Methods: In this active prospective clinical trial peritumoural injection of methylene blue has been performed in 23 patients to date.

Results: There is agreement of SLN findings and final pathology in 22 cases (96%). SLN's have been identified in 19 patients (83%); of these, 5.3% were positive on final analysis. Non-SLN CC adenopathy were identified in 18 patients (78%); of these, 94% were truly negative for metastasis.

Conclusions: SLNB is a non-invasive and accurate means of identifying CC SLN's in PTC. This technique may allow thyroid surgeons to select out patients needing formal CC neck dissection.

Workshop #15

09:30-10:00 ***Thyroid Forum: Do the Benefits Outweigh the Risks - Neck Dissection and Thyroid Cancer*** – R. Payne, MONTREAL, QC PANEL: TBA

**TUESDAY, MAY 12, 2009 - MORNING
ACADIA ABC ROOM
MARRIOTT HARBOURFRONT HOTEL**

Paper Session: HEAD AND NECK SURGERY 3

Chair: Dr. S. Durham, Vancouver, BC

10:30-10:38 ***Planned Post-radiotherapy Neck Dissection in Patients with Head & Neck Malignancy*** – M. Brake, G. Thompson, J. Trites, et al. HALIFAX, NS

Learning Objectives

1. To review the treatment regime of planned neck dissection following radiation therapy.
2. To review survival and outcomes of the patient treated with this regime at our centre.

Abstract #115

Introduction: Optimal therapy for patients with metastatic neck disease remains both controversial and challenging. Although radiation (XRT) alone or in conjunction with neck dissection (ND) produces equivalent neck control rates for early stage disease, post-radiotherapy ND has traditionally been used to improve loco-regional control.

Methods: A consecutive, retrospective review of 28 patients with node-positive malignancy of the head & neck treated with planned unilateral (n = 25) or bilateral (n = 3) ND following XRT between July 2001 and January 2006 was performed to assess treatment outcomes and survival.

Results: Median interval to ND was 9.6 weeks with a median number of 21 + 9 lymph nodes per specimen. Mean follow-up was 2.8 years and no patient was lost to follow up. Ten of 31 (32%) neck dissection specimens demonstrated evidence of residual carcinoma. Overall survival at two-years was 85%; five-year overall survival was 65%. Addition of concurrent chemotherapy did not have an impact on presence of residual neck disease.

Conclusion: Based on the frequency of residual malignancy in the neck of patients treated with primary radiotherapy, a planned,

post-radiotherapy neck dissection should be strongly advocated for all patients presenting with advanced stage neck disease.

10:38-10:46 *Number Needed to Treat Analysis for Planned Neck Dissection after Chemoradiotherapy for Advanced Neck Disease* – H. Javidnia, M. Corsten, OTTAWA, ON

Learning Objectives

By the end of this session the audience will be able to make a more informed decision regarding planned neck dissection following chemoradiotherapy for a patient presenting with head and neck cancer and advanced neck disease.

Abstract #116

Objective: To analyze how many planned neck dissections (PND) must be performed to prevent one fatal neck recurrence after chemoradiotherapy for head and neck cancer with regional metastasis.

Methods: A systematic literature review of studies using chemoradiotherapy as primary treatment for head and neck cancer was performed. Data was extracted where possible, to determine estimates for the following variables: (1) percentage of N2–3 necks still harbouring cancer after chemoradiotherapy as proven by pathology from neck dissection (C); (2) percentage of regional recurrence after PND (P); (3) percentage of regional recurrence after salvage neck dissection for patients without initial PND in whom neck disease recurred after chemoradiotherapy (S); and (4) mortality rate of PND (M). The number needed to treat was calculated using the following equation: $1/(C*S + C*M) - (P + M)$

Results: The number needed to treat is 6.7.

Conclusion: To prevent one fatal neck recurrence after chemoradiotherapy for head and neck cancer with N2-3 disease one would need to perform 6.7 planned neck dissections. Although ideal, there would be great difficulty in addressing this question in a randomized control trial. The results of this study will aid surgeons and patients in making more informed decisions regarding neck dissections.

10:46-10:54 *18F-FDG PET/ CT in Management of Salivary Gland Malignancies* – E. Lamarre, R. Lorenz, J. Scharpf, CLEVELAND OH

Learning Objectives By the end of this presentation, the conference participant will be able to cite the accuracy of PET/CT versus CT in the evaluation of salivary gland malignancies.

By the end of this presentation, the conference participant will have evidence to support the use of both modalities - PET/CT and CT - in the evaluation of salivary gland malignancies.

Abstract #117

Objective: The value of 18F-FDG PET/CT in staging and restaging salivary gland malignancies remains undefined. The objective of this study was to compare the accuracy and predictive value of PET/CT to conventional imaging.

Method: This study is a retrospective review of patients with salivary gland malignancies who underwent PET/CT, and CT between 2001 and 2008. Gold standard was pathology and clinical course when pathology was not available. Results: 49 patients underwent 87 PET/CT studies and 72 CT studies. The most common histopathologies included adenoid cystic (n=16), adenocarcinoma (n=13), acinic cell carcinoma (n=9), mucoepidermoid (n=6) and carcinoma ex pleomorphic adenoma (n=3). The positive predictive values of PET/CT at the primary site, neck and distant sites were 86%, 70% and 73%; the negative predictive values were 95%, 100% and 95%. The PPV of CT were 92%, 70% and 77% and the NPV were 81%, 95% and 100% respectively. The accuracy of PET/CT was 91% whereas CT was 87%.

Discussion: Salivary gland malignancies have a range of biologic behavior, with a propensity for indolent metastatic disease. While the predictive values between PET/CT and CT are comparable, evaluating the false negative and positive studies supports the use of these modalities in a complementary fashion.

10:54-11:02 *The Clinical Utility of PET-CT in the Management of Squamous Cell Carcinoma of Neck Nodes with an Unknown Primary Malignancy: A Preliminary Report* – L. Rudmik, J. Dort, H. Lau, et al. CALGARY, AB

Learning Objectives

By the end of this paper, head and neck surgeons will be introduced to the potential benefit of using PET-CT in the work-up of an unknown primary malignancy.

Abstract #118

Objective: To determine the utility of a diagnostic PET-CT to improve detection of an unknown primary malignancy of the head & neck cancer compared to the traditional work-up of pan-endoscopy and biopsies alone. We will report our interim results in this presentation.

Methods: This prospective trial began in January 2008. Eligible patients received a pre-operative PET-CT. Panendoscopy along with bilateral tonsillectomy, biopsies of the nasopharynx and base of tongue were performed by the surgeon who was blinded to the PET-CT results. During the same OR, after the standard panendoscopy and biopsies, the PET-CT results were revealed and additional PET-CT directed biopsies were then performed when indicated.

Results: To date, 7 patients have been enrolled in the study. 5/7 are male and mean age is 63 years. Presenting N-stage includes: N1 – 3 patients and N2b - 4 patients. 1/7 (14%) primary found on blinded panendoscopy and biopsies. 5/7 (71%) primaries found on PET-CT directed biopsies. 1/7 primary (14%) was not found after both panendoscopy and PET-CT.

Conclusion: Panendoscopy along with tonsillectomy, biopsies of nasopharynx and base of tongue appear to miss a meaningful proportion of primary malignancies. Preoperative PET-CT may improve detection of the primary malignancy location during the work-up of an unknown primary of the head and neck.

11:02-11:10 *Do Socio-economic Status and Route Diagnosis Affect the Stage at Presentation in Head and Neck Cancer in Ottawa, Canada?* – S. Johnson, M. Corsten, J. McDonald, OTTAWA, ON

Learning Objectives

1. To examine the socio-economic status (SES) of patients presenting to the Head and Neck Cancer (HNC) Clinic at the Ottawa Regional Cancer Center.
2. To determine if SES has an impact on when patients present with HNC.
3. To determine if the route of diagnosis (i.e. if a patient is diagnosed by their family physician, by themselves or by a dentist) has an effect on the stage at which they present with their cancer.

Abstract #119

Objectives: 1) To determine if socio-economic status (SES) affects the stage at presentation of head and neck cancer (HNC) patients in Ottawa, Canada. 2) To determine if the route of diagnosis affects the stage at presentation in these patients.

Methods: We obtained data on SES, method of diagnosis, and stage at presentation for patients presenting to the Head and Neck Cancer Clinic at The Ottawa Hospital Regional Cancer Centre (TORCC). We performed a logistic regression analysis using stage at presentation as the dependent variable.

Results: We found a statistically significant association between average family income (by postal code) and stage at presentation; patients with postal codes indicating lower income families presented at an earlier stage (OR 0.97, p=0.03). We found that oral cancers presented at a later stage overall compared with other HNC's (OR 10.3, p<0.001), but that oral cancers diagnosed by a dentist presented at an earlier stage (OR 0.31, p=0.01).

Conclusions: We found evidence that in Ottawa, Canada patients of a lower SES with HNC presented at an earlier stage. In addition, we found that patients presenting with oral cancers presented at an earlier stage if they were diagnosed by a dentist.

11:20-11:28 *Head and Neck Surgical Morbidity in the Elderly Population* – E. Barker, D. Brown, TORONTO, ON

Learning Objectives

1. To understand the changing demographics of the Canadian population.
2. To review the literature of the elderly population in head and neck surgery.
3. To understand the ethical debate surrounding health care and the elderly.

Abstract #120

Throughout the developed world, the population is ageing. This has several health and economic implications. In 2001, over 430,000 Canadians were 85 years of age or older, more than twice as many as in 1981 and more than twenty times as many as in 1921. The proportion of Canadians aged 85 or more is expected to grow to 1.6 million in 2041, this will make up 4% of the overall population. Another key factor is the increase in life expectancy. For men this has increased from 75.8 years to 81 years from 1997 to 2041 and for women from 81.4 years to 86 years. We reviewed the literature relating to surgical intervention in this elderly population. Interestingly, the same conclusions were drawn from multiple institutions: Firstly, head and neck surgery in the elderly is safe. Secondly, co-morbidities can predict which patients are going to be more likely to have a complication and addressing these problems pre-operatively can reduce post-operative morbidity. Thirdly, time under general anaesthesia is central to both complication rate and length of hospital stay. We also looked at the literature surrounding the ethical debate related to health-care in the elderly. This poses some interesting and often difficult questions.

11:28-11:36 *The Use of Mitomycin C in Head and Neck/Airway Surgery: Does it Really Work?* – D. Brown, TORONTO, ON

Learning Objectives

1. Gain understanding of the biology and uses of Mitomycin C.
2. Gain understanding of the effectiveness of Mitomycin C.
3. Gain knowledge of the complications of Mitomycin C.

Abstract #121

Objective: Topical application of Mitomycin C has been used for over 10 years by otolaryngology. Other specialties have reported serious complications. This presentation will systemically review and critically evaluate all the published data on the use of Mitomycin C in Head and Neck/Airway Surgery.

Data Sources: Published data indexed in MEDLINE EMBASE or Cochrane databases. Inclusion criteria will be outlined. Evidence included is size, study design and evidence level.

Results: Twenty-one manuscripts were studied in the inclusion criteria. Human studies showed benefit in 85% while animal studies showed 60% benefit. Random-effects modeling indicated an 80% improved outcome attributable to Mitomycin C. Mitomycin C – treated animals has less impressive results vs. controls.

Conclusions: Poorly controlled clinical studies and lack of significance in pooled animal data, show that Mitomycin C utility is undetermined. Significant complications are present and caution should be exercised when using Mitomycin C in surgery.

11:36-11:44 *Prevalence of Trismus in Head and Neck Cancer Patients Treated with Radiotherapy* – G. Jeremic, V. Venkatesan, A. Hammond, et al. LONDON, ON

Learning Objectives

By the end of the academic year, the second year resident will be able to assess for limited mouth opening as a complication of radiotherapy in head and neck cancer patients seen in an outpatient Oncology clinic.

Abstract #122

Background: Head and neck cancer patients treated with radiotherapy have long-term morbidity that can lead to significant quality of life issues. Radiation can have adverse effects on surrounding normal structures including the muscles of mastication, which can lead to muscle spasms, cramping, and oromandibular dystonia. Severe fibrosis and soft tissue contracture can result in trismus.

Objective: To determine the prevalence of trismus in head and neck cancer patients treated with radiotherapy.

Methods: Cross-sectional observational study.

Study population: Previously radiated head and neck cancer patients.

Outcome measures: Mandibular Function Impairment Questionnaire - subjective measure of symptoms and impact on quality of life. Mouth opening will be quantified by measuring maximal vertical distance (MVD), maximal protrusion (MP), and maximal lateral distance (MLD), and reflecting this as a mobility index. Variables analyzed will include age, gender, tumour site, radiation field, and time post-treatment.

Results: Will be presented.

11:44-11:52 *Long-term Outcomes of Submandibular Gland Transfer for Prevention of Postradiation Xerostomia* – H. Seikaly, N. Jha, D. Williams, et al. EDMONTON, AB

Abstract #123

Introduction: Xerostomia is a permanent and devastating sequela of head and neck irradiation and its numerous consequences affect most aspects of the patient's life. We have recently described a new method of preserving and protecting one submandibular gland from radiation damage through the Seikaly - Jha Procedure (SJP).

Purpose: The purpose of this presentation is to report the long-term outcomes of the SJP

Study design: Inception cohort

Methods: The trial was conducted between February 1999 and February 2002. All the patients were followed through the head and neck cancer clinic at the Cross Cancer Institute. All the data was collected by a dedicated research nurse. Salivary function was evaluated at regular intervals with salivary flow studies and questionnaires.

Results: A total of 96 patients were enrolled in the study. Salivary flow was preserved in seventy six percent of the patients and eighty three percent reported normal amount of saliva two years after radiation. There were no disease recurrences on the side of the transferred gland or in the submental space. There were no surgical complications attributed to the transfer procedure.

Conclusions: The SJP prevented xerostomia in 83% of the study patients. The approach appears to be oncologically sound and safe.

SCIENTIFIC POSTERS MONDAY & TUESDAY, MAY 11 & 12, 2009 NOVA SCOTIA BALLROOM

GENERAL OTOLARYNGOLOGY

G 1

Treating the Pregnant: An Otolaryngologist Perspective – T. Al-Khatid, M. Black, MONTREAL, QC

Learning Objectives

At the end of the presentation, the learner will be familiar with the common otolaryngologic conditions encountered or provoked during pregnancy. The presentation will allow the learner to choose a safe medication to use during pregnancy avoiding any harm to the gravid woman or her fetus.

Abstract #124

Background: Pregnancy changes the gravid woman. A set of physiologic changes occur. Various conditions may arise or gets revealed during pregnancy. The otolaryngologist should be familiar with these changes in relation to the head and neck area in order to provide assurance, expected management, or safe prescription of necessary medication(s).

Objective: To review the common otolaryngologic conditions encountered or provoked during pregnancy and to discuss the safety of otolaryngologic medications in pregnancy.

Methods: Physiologic changes during pregnancy that relate to otolaryngology will be discussed. Otologic, rhinologic, laryngologic, and head and neck manifestations during pregnancy will be discussed. The safety (during pregnancy) of the different medications commonly used by the otolaryngologist will be discussed.

Conclusion: Otolaryngologists should be aware of the common otolaryngologic conditions and safety of medications used to manage the gravid woman.

G 2

Rothia Mucilaginosa: A Common Oral Microbe in an Uncommon Clinical Presentation – B. Barber, D. Cote, A. Morrissey, E. Wright, EDMONTON, AB

Learning Objectives

By the end of this session, the clinician will be able to consider and recognize the potential of this uncommon pathogen to precipitate infection and complications in healthy patients, and apply appropriate management strategies minimize morbidity.

Abstract #125

Background: *Rothia mucilaginosa* is an infrequent, emerging opportunistic pathogen found among the anaerobes of the oral cavity. Often associated with halitosis, reports of infections with *R.mucilaginosa* have taken several forms in the head and neck region, yet have occurred predominantly in elderly or immunocompromised patients.

Methods: We report a complicated case of parapharyngeal space infection with accompanying renal failure in a middle-aged, healthy male arising from a tooth abscess infected with *R.mucilaginosa*. A description of diagnosis and management is given.

Results: A 41-year-old male presented acutely with a large, painful neck swelling secondary to an odontogenic abscess. The infection was surgically drained, debrided, and managed post-operatively with vancomycin, ceftriaxone, and metronidazole. The patient subsequently developed ARDS and post-infectious glomerulonephritis, for which he required three days of hemodialysis. Fourteen days post-operatively, renal function was restored and the space infection exhibited satisfactory healing progress.

Conclusion: We have shown that *R.mucilaginosa*, a pathogen shown to cause illness primarily in immunocompromised patients, can precipitate deep space neck infections and be associated with renal failure, even in healthy patients. Clinicians should be aware of this emerging opportunistic pathogen, and its potential for spread from the oral cavity to areas of the head and neck.

G 3

Lingual Thyroid: From Globus to Airway Obstruction - A Case Series and Literature Review – P. Dziegielewski, J. Chau, B. Barber, H. Seikaly, J. Harris, EDMONTON, AB

Learning Objectives

By the end of this session the general otolaryngologist will:

1. be able to identify clinical presentations where a lingual thyroid should be considered in the differential diagnosis;
2. be able to identify the appearance of a lingual thyroid on endoscopic and radiologic imaging studies;
3. be able to describe various treatment options for a lingual thyroid;
4. be familiar with functional outcomes of trans-oral excision of lingual thyroids.

Abstract #126

Objectives: Lingual thyroid glands are rare entities and are uncommonly found in adults. This study reviewed all adult lingual thyroid cases at the University of Alberta from 1998-2008 and compared clinical presentations and management to the literature.

Methods: All patients with a lingual thyroid were identified in a prospectively collected database. Charts were reviewed for symptoms, diagnostic modality, treatment and video fluoroscopic swallowing study results. A literature review of all papers in Medline containing the term “lingual thyroid” was conducted.

Results: 5 cases of adult lingual thyroids were identified. Symptoms ranged from mild globus to acute airway obstruction. All diagnoses were made by CT scan. Treatment consisted of trans-oral laser de-bulking of the lesions in all cases. All patients were asymptomatic post-operatively and demonstrated safe swallows. Symptoms and diagnostic testing were consistent with the literature; however, acute airway obstruction was unique to this series. Treatment in the literature largely consists of aggressive surgeries. Trans-oral laser de-bulking is a newer management strategy for lingual thyroids and this is the first study to report functional outcomes.

Conclusion: Although generally indolent, a lingual thyroid can have life threatening consequences. Diagnosis is often made as an afterthought once a CT scan is obtained. Trans-oral de-bulking provides minimally invasive therapy, which preserves swallowing function.

G 4

Synchronous Nodal and Extra-nodal Rosai Dorfman Disease Presenting with Airway Obstruction in an Elderly Female – J. Franklin, G. Jacob, LONDON, ON

Learning Objectives

By the end of this presentation the otolaryngologist will be able to describe the pathologic features of Rosai Dorfmann disease.
By the end of this presentation the otolaryngologist will be able to consider Rosai Dorfmann disease in the differential diagnosis of Lymphoma and other neck masses.
By the end of this presentation the otolaryngologist will be able to consider that Rosai Dorfmann disease affects either the nodal or extra-nodal sites but rarely both.

Abstract #127

Background: Rosai-Dorfman Disease (RDD) is a condition characterized by a proliferation of immune-mediator cells (macrophages) in lymph node sinuses and lymphatics within extranodal tissue. RDD is a rare disease, most often affecting children with an average age of 20.6 years. RDD is almost uniformly limited to either nodal disease or extra-nodal disease.

Case Report: A 93-year old female presented with submandibular lymphadenopathy and progressed to develop hoarseness, stridor and enlarging masses in the supra-glottis, medial canthus and nasopharynx. Biopsy revealed macrophages phagocytosing lymphocytes within a lymph node, pathopneumonic for RDD. Treatment with high dose steroids resulted in rapid relief of her airway symptoms as well as complete resolution of the cervical lymphadenopathy, nasopharyngeal mass, medial canthal lesion and supraglottic lesion.

Conclusion: RDD is an extremely rare condition. Presented is a case report of the oldest known patient with RDD. This report is one of only few cases known to affect nodal and extra-nodal sites synchronously.

G 5

Arteriovenous Malformation of the Scalp with Cerebral Seal – K. Kelly, J. Trites, M. Taylor, M. Bullock, R. Hart, HALIFAX

Learning Objectives

The student will gain an understanding of the approach to forming a differential diagnosis of a pulsatile temporal mass, the epidemiology of this rare entity, and the role of imaging in helping to distinguish pseudoaneurysm from A-V fistula.

Objectives: We discuss the differential diagnosis of a pulsatile temporal mass, the pathogenesis and epidemiology of this rare entity, and the role of imaging in helping to distinguish arteriovenous malformation from other vascular etiologies.

Background: A 21-year-old male presented with an expanding pulsatile right temporal mass. His symptoms progressed to include positional syncope. Imaging disclosed a large vascular mass in the temporal fossa which was entirely extracranial. An arteriovenous fistula was suspected until a history of prior (remote) trauma was elicited: the patient had received a penetrating injury to the area a number of years before. The syncope was attributed to cerebral steal with internal-to-external carotid shunting. The lesion was carefully studied with a view to endovascular embolization, but was too large to be addressed by this modality.

Methods: Surgical care included a superficial parotidectomy with hemicoronal extension. The arteriovenous malformation was ligated deep to the facial nerve and resected from the temporal fossa.

Results: The patient had an uncomplicated preoperative course with complete resolution of all neurologic symptoms.

Conclusion: Cerebral steal is a rare consequence of arteriovenous malformation. The current literature is reviewed and the diagnostic approach as well as therapeutic options are discussed.

G 6

Pseudoaneurysm of the Internal Maxillary Artery – M. Khabsa, A. Alwael, F. Alqattan, K. Alzobi, KUWAIT

Learning Objectives Recurrent epistaxis might be a sign of a major problem even if it is a mild one. Therefore it should not be neglected.

Abstract #129

Appropriate investigation should be done especially if the patient did not respond to the primary treatment.

A case report of a 14 years old male patient with a past history of Motor vehicle accident presented with a mild unilateral recurrent epistaxis not controlled with medical treatment. Further investigation including CT angiography revealed pseudoaneurysm of the Right internal maxillary artery. Embolisation was performed with no complications.

No further epistaxis or complications in the 7 months follow-up.

G7

Management of Cutaneous Squamous Cell Carcinoma – L. Kus, N. Zeitouni, V. Tron, A. Tan, KINGSTON, ON

Learning Objectives

1. By the end of this session, the reader will be able to recognize and identify relevant patient and tumour risk factors that affect a patient's outcome in head and neck cutaneous squamous cell carcinoma.
2. By the end of this session, the reader will be able to select appropriate treatment modalities for head and neck cutaneous squamous cell carcinoma cases based on the classification of these cases as either low- or high-risk for unfavourable prognoses.
3. By the end of this session, the reader will confidently be able to design a suitable follow-up regimen for patients with cutaneous head and neck squamous cell carcinoma after their lesion has been resected.

Abstract #130

Objectives: Cutaneous squamous cell carcinoma (cSCC) comprises nearly 25% of non-melanoma skin cancers and causes significant mortality. Given its clinical significance, a clear strategy is needed for managing cSCC.

Methods: We reviewed the current literature to define a comprehensive strategy for head and neck cSCC management. This schema is based on patient and tumour characteristics that allow for classification of cases into low- or high-risk categories.

Results: Immunosuppression, recurrence, lesion size, depth, location, surgical excision margins, tumour differentiation, and perineural invasion are factors predictive of cSCC outcome. Low-risk cases are treated effectively with several surgical techniques, with Mohs micrographic surgery (MMS) considered the gold standard. High-risk patients are best treated with MMS or wide-margin excision along with adjuvant radiotherapy in select cases. Associated lymphadenopathy necessitates examination by imaging or biopsy for metastases. Metastatic cSCC requires complete resection and adjuvant radiotherapy. High-risk and metastatic cSCC cases should be followed frequently for several years with full-body skin, lymph node, and neurologic examination.

Conclusions: cSCC patients can be defined as low- or high-risk for negative disease outcomes based on patient and tumour characteristics. This classification can be used to guide decisions regarding treatment modalities, need for adjuvant radiotherapy, and subsequent follow-up.

G 8

Identification of Caudal Turbinate Hypertrophy by Trans-oral Nasopharyngoscopy in Obstructive Sleep Apnea – F. Lavigne, A.S. Evard, V. Forest, MONTREAL, QC

Learning Objectives

1. Review of turbinate physiology and its role in O.S.A. pathophysiology.
2. Revision and proposition of new technique for the control of turbinate hypertrophy.
3. Critical clinical aspects of nasal obstruction evaluation.

Abstract #130A

It has been hypothesized that nasal obstruction causes an increase in negative pressure in the upper airway and may induce airway collapse. This study will identify caudal turbinate hypertrophy in a group of patients with O.S.A. by a trans-oral nasopharyngoscopy (T.O.N.). Thirty-two patients with moderate O.S.A. were included in this prospective study. All patients underwent a complete head and neck examination, allergy skin tests, acoustic rhinometry and polysomnography. Under topical anesthesia, T.O.N. with a flexible Karl-Storz endoscope evaluated the level of hypertrophy and a grade from 1 to 3 was attributed. Grade I represents no obstruction, II obstruction of 50% of the diameter of the choana opening and III contact with choana. The two authors reviewed independently the pictures to grade them. T.O.N. has allowed to show the level of turbinate hypertrophy in 28 patients. The technique of T.O.N. will be described. The Inter-reader correlation was excellent. A level II of obstruction was observed in 13 patients, 5 other patients were considered level III and the last 10 patients were level I.

Conclusion: T.O.N. is a well-tolerated examination allowing the otolaryngologist to identify the choanal turbinate hypertrophy that seems linked to O.S.A. intensity and lead to more precise preoperative planning.

G 9

Canadian Otolaryngologists' Interest and Participation in Global Health Initiatives – M. Lecavalier, L. McLean, OTTAWA, ON

Learning Objectives

After reading this poster, the learner will:

1. know the level of interest and participation of Canadian Otolaryngologists in Global Health Initiatives (GHI);
2. appreciate the barriers that discourage Canadian Otolaryngologists from participating in GHI;
3. recognize actions that can be taken to overcome perceived barriers to participation in GHI;
4. have the potential to participate in a mentorship model to encourage GHI participation.

Abstract #130B

Purpose: To explore the level of interest in Global Health Initiatives (GHI) by Canadian Otolaryngologists as well as identify the major barriers that may discourage participation.

Methods: An internet based survey was sent to all Canadian Otolaryngologists registered with the Canadian Society of Otolaryngology in 2008. The survey explored past and present GHI projects, benefits of and barriers to participation as well as opportunities for mentorship.

Results: Preliminary results suggest that several Canadian Otolaryngologists are actively participating in GHI. Similarly, many other Otolaryngologists are interested in becoming involved in GHI; however several factors are cited as barriers to GHI development both non-specific and specific to Otolaryngology.

Conclusion: Participation in GHI can be a very rewarding facet of a physician's career. Although Canadian Otolaryngologists demonstrate an active interest in this area, various barriers to participation in GHI exist including a lack of experience in GHI project development. A mentorship model is presented as a method facilitating development of Otolaryngology GHI.

G10

An Unusual Case of Acute Otitis Externa: Aural Myiasis – S. Nayan, A. Conlin, S. Kilty, BROSSARD, QC

Learning Objectives

1. To raise awareness of aural myiasis as a possible cause of otitis externa.
2. To present the appropriate management for aural myiasis.

Abstract #131

Background: Aural myiasis is a rare cause of otitis externa. Cases of aural myiasis are more commonly reported in tropical countries, usually in children. However, to date, there have been no such reported cases in North America.

Objectives: To present an illustrative case of aural myiasis; its presentation and management.

Methods: Case report.

Results: A 91-year-old female with multiple medical problems was referred for right-sided acute otitis externa. The patient had been complaining of right-sided otalgia for three days. Examination of the right ear revealed a mild amount of inflammation with no purulent secretions in the external auditory canal; the tympanic membrane was intact and notably, there was a live maggot. The maggot was removed using saline irrigation. The ear was dried and then treated with topical medical therapy. It healed without further incident.

Conclusion: An aural foreign body including maggots can be easily overlooked. Awareness of aural myiasis is important as it can result in serious complications such as permanent injury to the tympanic membrane, inner ear or infection of the petrous bone. Such complications can be avoided with early diagnosis and prompt clinical management.

G11

Necrotizing Vasculitis of the Tongue Resulting in the Loss of the Anterior Two Thirds of the Tongue – T. Phillips, T. Wallace, R. Hart, J. Trites, M. Taylor, HALIFAX, NS

Learning Objectives

1. To present a rare case of necrotizing vasculitis which few people may have experience in treating.
2. To present possible treatment methods for patients who are missing the majority of their tongue.

Abstract #132

Objectives: To present an interesting case of a gentleman who lost the anterior two thirds of his tongue due to necrotizing vasculitis.

Methods: This study was conducted as a retrospective single subject case report.

Results: November 2006 a 67 year old male presented to the ER with tongue and abdominal pain. The abdominal pain was transaminitis and the tongue pain was managed with dexamethasone. On the fifth day after presentation the patient developed a bilaterally paralyzed tongue. Imaging of the head, neck and chest showed no pathology except for thrombosis of the left vertebral artery. The following week the patient was taken to the OR where a laryngoscopy, pharyngoscopy, and esophagoscopy proved to be normal. The tongue appeared gray and an ulcer was visible in the floor of the mouth. When the base of the tongue was palpated by the referring otolaryngologist "the entire tongue fell out of his mouth." The chronic tissue was debrided and the wound closed at the base of the tongue. The patient recovered well, but required a G-tube due to dysphagia. The pathologist reported ischemic necrosis of tongue associated with necrotizing vasculitis and luminal thrombosis of medium-sized arteries.

Conclusions: This is an interesting case of necrotizing vasculitis of the tongue, in which the entire anterior two-thirds of the tongue became necrotic and was lost as a result of the ischemic event. He recovered well and is currently G-tube dependent waiting for a free flap reconstruction.

G12

Taste Satisfaction of Oral Lidocaine with Administration for Peritonsillar Abscess Drainage – R. Rourke, J. Bonaparte, M. Corsten, OTTAWA, ON

1. To appreciate the degree of patient dissatisfaction with oral lidocaine spray.
2. To encourage discussion about improvement of patient comfort during invasive procedures.

Abstract #133

Objectives: To assess patients' taste perception of oral lidocaine administration prior to peritonsillar abscess drainage.

Methods: 13 patients completed a survey five minutes after administration of oral lidocaine to the soft-palate and tonsils. Subjects completed a visual analog scale (VAS) assessing the flavor of oral lidocaine, graded from zero (most unpleasant) to 100 (most pleasant), with 50 graded as neutral. Subjects also indicated whether lidocaine improved or worsened the peritonsillar abscess drainage experience and whether they would want to use lidocaine spray if it had no flavour or a pleasant flavour.

Results: VAS for perception of taste showed a mean ranking of 6.2 (SD 8.7) on a scale of 0 to 100. 10/13 patients indicated that lidocaine worsened the experience of peritonsillar abscess drainage while 3 indicated it had no effect on the procedure. 13/13 patients indicated that they would want lidocaine used in the future if it had no flavour or a pleasant flavour.

Conclusions: There is dissatisfaction with the flavour of lidocaine spray. A new lidocaine product or administration technique with no flavour or a pleasant flavour may improve patient comfort and satisfaction during invasive procedures such as peritonsillar abscess drainage. Further study into such products is warranted.

G13

Magnetic Resonance Imaging Illustrating Change in Ostmann's Fat Pad with Age - A Possible Etiology in Patulous Eustachian Tube – A. Thamboo, M. Bance, H. Amoodi, HALIFAX, NS

Learning Objectives

1. Indicate the signs and symptoms of patulous eustachian tube.
2. Illustrate the structures that surround the eustachian tube and their function.
3. Provide current understanding of patulous eustachian tube.
4. Provide a springboard for further evaluation of patulous eustachian tube.

Abstract #134

Objectives: It is still unclear in patulous eustachian tube (PET), a physical disorder, what structures change to cause this phenomenon. The purpose of this study is to establish a normal population mean of the size of anatomical structures surrounding the eustachian tube.

Methods: A retrospective analysis of 25 skull base patients who had MRIs with no history of patulous eustachian tube were evaluated. The population consisted of only adult males and females between the ages of twenty-three and eighty-four. The eustachian tube medial cartilage, Fat Pad of Ostmann, the carotid-ostium distance and the tensor veli palatini muscle were measured.

Results: Two components of the medial cartilage were measured - the long and the transverse. The long component measured 18-26mm (mean: 23.2mm). The transverse measured between 6-10mm (mean: 7.6mm). The Fat Pad of Ostmann area measured 13-18mm² (mean: 14.7mm²). The carotid-ostium distance was between 26 and 32mm (mean: 28.4mm). The tensor veli palatini measured between 30 to 60mm (mean: 43mm). The change in anatomical structures with age was compared and showed that no parameter changes except for the Ostmann's fat pad decreased in size with age.

Conclusion: This study provides a good baseline for future studies comparing structures in normal eustachian tube function to those with PET. The decrease in Ostmann's fat pad with age requires more analysis as this maybe the biggest contributor to PET.

HEAD AND NECK SURGERY

HN1

The Accuracy of Post Thyroidectomy PTH and Corrected Calcium Levels as Early Predictors of Hypocalcemia – A. Al-Terkawi, Y. Al-Ghonaim, A. Bahnassy, S. Al-Dhahri, RIYADH, SAUDI ARABIA

Abstract #135

Objective: To estimate the accuracy of different parathyroid hormone (PTH) and corrected calcium (cCa) levels at different times as early predictors of post thyroidectomy hypocalcemia.

Methods: A retrospective cohort of patients, who underwent total or completion thyroidectomy at KFMC between January 2006 until March 2009, was followed until hospital discharge. Patients were observed clinically for hypocalcaemia, in the mean time the postoperative PTH and cCa levels after 6, 12, and 20 hours and then twice daily were recorded.

Results: 79 patients were eligible to our study, 30.4% had hypocalcemia. PTH measurement at 6 hr postoperatively was a good predictor of hypocalcemia (AUC = 0.87, 95% CI 0.77 – 0.97). The mean PTH at 6hr for hypocalcemic patients was 1.48 (95% CI of 0.77 – 2.18). A 1.7 pmol/L as a cut-off level of PTH at 6 hr has 83.3% sensitivity, 89.1% specificity, 76.9% PPV, and 92.4% NPV. In the other hand a 2.1 mmol/L as a cut-off level of cCa at first day postoperatively has 70.4% sensitivity, 80.4% specificity, 65.3% PPV and 84.0% NPV in predicting patients who will develop hypocalcemia.

Conclusions: PTH measurement 6 hours after surgery is more accurate than serial calcium level measurement in early prediction of patients at risk of hypocalcemia. Thus, single PTH measurement postoperatively will help in discharging the patients safely within first 24 hours, improving bed utilization and cost effective care.

HN2

Parathyroid Cyst Presenting as a Large Neck Mass – T. Al-Khatib, M. Black, MONTREAL, PQ

Learning Objectives

The poster presentation will help the otolaryngologist expand the differential diagnosis of a neck mass. The learner will have a clear understanding how to suspect a parathyroid cyst and how to evaluate, diagnose and manage this rare entity with ease.

Abstract #136

Objective: To discuss an unusual presentation of a parathyroid cyst as a fluctuating large neck mass. In addition, the diagnosis, classification, work up (including biochemical, radiological, and histopathological), and management options will be discussed.

Methods: We report a 47 year old male farmer who presented with a left neck mass for 2 years. The mass fluctuates with straining. He presented because of compressive symptoms. Physical exam revealed a fluctuating left neck mass just lateral to midline (4x5 cm) Non tender, non pulsatile. The trachea was deviated. A CT scan was performed. The mass was pushing the trachea and thyroid gland which rose the suspicion of a parathyroid lesion. a fine needle aspiration cytology was not helpful. The fluid was sent for parathyroid hormone (PTH) which was elevated. serum PTH and calcium levels were also elevated.

Results: The lesion was classified as a functioning cyst and was excised. It was cystic in nature (6.5x2.5x5.5 cm) filled with proteinaceous material. Histopathological examination confirmed the diagnosis of a parathyroid cyst.

Conclusion: Parathyroid cysts frequently presents a diagnostic problem given the rarity of occurrence. We would like to raise awareness among otolaryngologists of this rare diagnosis and discuss diagnostic and management options.

HN3

Parathyroid Carcinoma Coexisting with a Papillary Thyroid Carcinoma – H. Amoodi, R. Hart, M. Taylor, M. Bullock, F. Makki, HALIFAX, NS

Learning Objectives

1. Thyroid pathology should be excluded in any patient presenting with parathyroidism
2. Preoperative and intraoperative evaluation of both glands is highly recommended in all patients undergoing thyroid or parathyroid surgery.

Abstract #138

Background: Hyperparathyroidism is the 3rd most common endocrine disorder. Thyroid pathology has been reported from 15% to 70% in patients with primary hyperparathyroidism. Parathyroid carcinoma coexisting with a non-medullary thyroid carcinoma is extremely rare. This is the first reported case in North America.

Case Report: We present an unusual case of a young lady presented with primary hyperparathyroidism and inferior left parathyroid mass identified on Sestamibi scan. The parathyroid mass was resected simultaneously with the ipsilateral thyroid lobe. The resected specimens were pathologically identified as parathyroid carcinoma and papillary thyroid carcinoma.

Conclusion: Synchronous thyroid and parathyroid diseases are not uncommon. Parathyroid carcinoma with non-medullary thyroid carcinoma is a real possibility. Preoperative and intraoperative evaluation of both glands is highly recommended in all patients undergoing thyroid or parathyroid surgery.

HN4

Hyalinizing Clear Cell Carcinoma of the Oral Cavity: 2 Case Reports and a Review of the Literature – B. Barber, D. Cote, H. Seikaly, EDMONTON, AB

Learning Objective

By the end of this session, the clinician should be able to recognize the potentially aggressive nature of clear cell carcinomas, and regard surgical resection as a principal management strategy.

Abstract #139

Background: Hyalinizing clear cell carcinoma is a rare salivary gland tumor composed of glycogen-rich epithelial cells with abundant, clear cytoplasm. Recent studies reveal indicators of the aggressive, infiltrative varieties of the carcinoma, and the propensity for recurrence or metastases.

Methods: We report on two patients that were diagnosed with clear cell carcinoma of the oral cavity: a Stage T3N2cM0 carcinoma of the base of tongue in a 59-year-old female, and a recurrent case of T4N0M0 staging in the maxilla of a 74-year-old female. A review of the literature is included.

Results: Immunohistochemistry of the tongue mass revealed positive staining with CK5/6, CK7, and S100, but negative glycogen, mucin, and CK20 staining. Management involved resection and reconstruction with a radial forearm free flap and fibular flap. An analysis of the maxilla tumor demonstrated a positive CK7 stain, and negative CK20, S100, vimentin, and smooth muscle actin staining. This patient was managed with resection and reconstruction with an anterolateral thigh flap and pectoralis flap, and subsequent radiotherapy. Both patients are alive and well 3 and 9 months respectively, post-resection.

Conclusions: We have described the 2 cases of aggressive clear cell carcinoma of the oral cavity, and their successful management by surgical resection.

HN5

Outcomes Following Minimal Dissection of the Recurrent Nerve in Thyroidectomy – C. Bebbington, M. Taylor, HALIFAX, NS

Learning Objectives

By the end of this session, the third year medical student will be able to describe an alternative surgical approach to recurrent nerve identification and handling in thyroidectomy surgery.

By the end of this session, the third year medical student be aware of common complications associated with thyroid surgery and their rates of occurrence.

Abstract #140

Objective: To evaluate outcomes of surgical thyroidectomies done with late identification and minimal dissection of the recurrent laryngeal nerve.

Patients and Methods: A retrospective study was performed on a consecutive series of patients who underwent thyroidectomies between July 2001 and July 2008 in the Division of Otolaryngology of Dalhousie University, Halifax. All procedures were done by a single surgeon using late identification and minimal dissection of the recurrent nerve. All patients were identified using the division's electronic patient registry. Surgical complication rates were analyzed with focus on recurrent laryngeal nerve damage.

Results: A total of 121 thyroid surgeries were performed including 82 hemithyroidectomies, 16 completion thyroidectomies and 23 total thyroidectomies; in total, there were 144 nerves at risk. 1 patient experienced long-term hypocalcemia requiring pharmacotherapy. 1 patient experienced a vocal cord paralysis due to injury of the recurrent laryngeal nerve. 4 patients experienced hypertrophic scarring of the incision site requiring surgical revision.

Conclusion: Our experiences suggests that thyroidectomies using late identification of the laryngeal nerve is an effective technique for minimizing traction-induced vocal cord paralysis.

HN6

Cutaneous Leiomyosarcoma Arising From the Erector Pili Muscle on the Pinna: A Case Report and Literature Review – J. Franklin, T. Greenspoon, B. Wherli, LONDON, ON

Learning Objectives

By the end of this presentation the otolaryngologist will be able to describe the different types of leiomyosarcoma.

By the end of this presentation the otolaryngologist will be able to list the different types of superficial form of leiomyosarcoma.

By the end of this presentation the otolaryngologist will be able to consider the tissues of origin for superficial leiomyosarcomas.

Abstract #142

By the end of this presentation the otolaryngologist will be able to respect the rarity of superficial leiomyosarcoma as compared to deeper leiomyosarcomas.

Background: Leiomyosarcoma is a malignant neoplasm derived from smooth muscle. Leiomyosarcomas may appear either in the deep tissues or, much less commonly, superficially. The superficial type of leiomyosarcoma is further classified into cutaneous and subcutaneous lesions. The cutaneous subtype arises in the dermis, with or without extension into the subcutis; the subcutaneous subtype originates in the subcutis. Subcutaneous leiomyosarcomas arise from the smooth muscle in blood vessels, usually small and medium sized veins, and cutaneous lesions are derived from erector pili muscles.

Case Report: A 79 year old male presented with a non-tender, growing nodule on his left pinna. Punch biopsy revealed an atypical spindle cell neoplasm. Wide excision with clear margins was performed with full thickness skin graft reconstruction. Pathology demonstrated a grade II/III moderately differentiated leiomyosarcoma present in the dermis with limited extension into the subcutis. The tumor measured 1.1 cm with a mitotic activity was 7/10 HPF. The tumor was arising from erector pili muscle.

Conclusion: Presented is an extremely rare case of cutaneous leiomyosarcoma arising in the erector pili muscle of the pinna with a review of the literature.

HN7

A Survey of Follow-up Policies for Head and Neck Cancer Treatment Centers Across Canada – S. Hall, KINGSTON, ON

Learning Objectives

By reading and understanding this poster an otolaryngologist/head and neck surgeon will have the increased knowledge based on the national variations to modify his own practice.

Abstract #143

Objective: To compare between-center follow-up policies at cancer treatment centers across Canada and to compare those policies to the evidence in the literature.

Method: Telephone survey with an otolaryngologist/head and neck surgeon from each of the major cancer treatment centers. Questions to be addressed will include length of followup, frequency, indications for transfer to referring doctors, use of routine screening tests and risk factors. The findings will be compared to AAO/HNS guidelines and evidence on recurrence patterns.

HN8

Lateral Ectopic Thyroid Goiter with a Normally Located Thyroid – R. Hart, M. Taylor, J. Trites, H. Amoodi, M. Bullock, F. Makki, HALIFAX, NS

1. Ectopic thyroid tissue should be considered in the evaluation of any neck mass, despite the presence of a normally located thyroid gland.
2. Ectopic thyroid tissues can undergo the same pathological changes as a normally located thyroid gland.
3. Malignancy must be excluded in laterally located ectopic thyroid tissue.

Abstract #144

Background: Midline ectopic thyroid tissue is not uncommon pathological entity, but laterally located ectopic thyroid tissue with a normally located thyroid gland is a very rare condition.

Case Report: We report an interesting case of unusual laterally located multinodular thyroid tissue with a normally located multinodular thyroid. A woman was seen in the otolaryngology clinic with a right submandibular mass. Clinical examination and investigations confirmed the presence of a multinodular goiter in an ectopic thyroid gland.

Conclusion: Laterally located ectopic thyroid tissue is very rare condition. Ectopic thyroid tissues can undergo the same pathological changes as a normally located thyroid gland. Ectopic thyroid goiter together with a normally located multinodular goiter is a rare entity, and this is the first to be reported in North America.

HN9

Utility of 18f-fluorodeoxyglucose Positron Emission Tomography for Diagnosis and Monitoring of Patients with Well – Differentiated Thyroid Carcinoma – R. Hundal, J. Young, K. Gulenchyn, C. Marriott, J. Freeman, P. Walfish, HAMILTON ON

Learning Objectives

This presentation will allow all observers to describe the use of FDG PET Scans for Well Differentiated Thyroid Carcinoma.

To understand and describe the characteristics of well differentiated thyroid carcinoma and how FDG PET scanning can image its presence.

Abstract #145

The audience members will be able to compare and contrast the use of FDG PET Scans compared to Whole Body Scanning in Well Differentiated Thyroid Carcinoma and when it is appropriate to use each modality.

To learn of the current guidelines in imaging for well differentiated thyroid carcinoma, including the need for revision of current guidelines.

Background: Positron emission tomography (PET) with 18F-fluorodeoxyglucose (FDG) is a useful technique for locating residual/recurrent thyroid cancer. This study was designed to determine the protocol for PET scan and assess its efficacy for long-term monitoring of patients with well-differentiated thyroid cancer (WDTC).

Methods: Patients previously diagnosed and treated for WDTC with persistently elevated serum thyroglobulin (Tg), underwent PET scan # 1 followed by cessation of thyroid hormone therapy for TSH stimulation. At that time, PET scan # 2 and iodine scan were administered under TSH stimulation.

Results: 21 patients with mean Tg level of 19.0 μ g/L [SD 24.8] were selected for the study. After withdrawal of thyroid hormone therapy the mean rise of TSH was 53.4 mU/L [SD 18.9]. TSH-stimulated PET scan (# 2) identified significantly higher number of uptakes than both, PET scan # 1 (odds ratio 3.02; 95% CI 1.16, 7.90 p=0.024) and iodine scan (odds ratio 32.64; 95% CI 4.07, 261.74 p=0.001). Also tumor to background (T/B) ratio was significantly higher in TSH-stimulated PET scan (3.61 vs. 2.55, p=0.033).

Conclusion: This study demonstrated the superiority of TSH-stimulated PET scan over 131I iodine scan and PET scan obtained while on T4 therapy, in detecting recurrent disease.

HN10

Pathology Reporting in Squamous Cell Cancer of the Head and Neck: Understanding the Minimum Data Set for Clinical Decision Making – M. Klein, J. Dort, J. Matthews, CALGARY, AB

Learning Objectives

After reviewing this poster, observers should:

1. understand that certain pathological variables are important prognostic indicators in HNSCC;
2. understand that inconsistencies in pathology reports can contribute to inappropriate postoperative decision making;
3. have a better understanding of inconsistencies in pathology reporting, and the importance of these inconsistencies;

4. be able to recognize possible solutions to the problem of inconsistent pathological reporting.

Abstract #146

Objectives: In patients who have been treated for head and neck squamous cell carcinoma with surgical excision and neck dissection, certain pathologic variables are important for clinical decision making and prognostication. We studied the fidelity with which some of these variables were recorded in pathology reports in a cohort of 163 patients undergoing surgical resection for SCC of the head and neck. For patients with malignant disease, incomplete pathology reporting can result in suboptimal clinical decision making in the postoperative period.

Methods: A retrospective review of the completeness of selected variables in the pathology reports of head and neck squamous cell carcinoma patients was conducted. Specifically, maximal tumor diameter, depth of invasion, distance to closest margin, number of lymph nodes removed and involved by SCC, and extra capsular spread are valuable prognostic indicators.

Results: Our retrospective analysis demonstrated that certain key variables are inconsistently reported in pathology reports.

Conclusions: Given that these pathological variables are important in assessing prognosis and determining treatment, they should be reported. This study shows that in current practice in one center in Calgary this is not being done consistently. This study serves to add to the body of evidence in support of the consistent inclusion of prognostically significant variables in pathology reports.

HN11

Location of Parathyroid Adenomas: 7 Years Experience – H. Marzouki, M. Hier, M. Black, M. Levental, R. Payne, MONTREAL, PQ

Learning Objectives

By the end of my session, surgeons will be able to describe a strategy for locating parathyroid adenomas when they fail to localize preoperatively. Moreover, these surgeons will be able to explain to their patients that minimally invasive parathyroidectomy is still possible in more than 40% of these cases, despite a failure of preoperative localization

Abstract #147

Objectives: To determine the most common location of parathyroid adenomas.

Methods: Data from 147 patients that underwent parathyroidectomy for hyperparathyroidism in Montreal, Canada at a McGill University teaching hospital between January 2001 and January 2008 were reviewed retrospectively. Patients with histopathological confirmation of parathyroid hyperplasia were excluded from the study (n=26). The 121 patients with confirmed adenomas were grouped according to their locations into right superior, right inferior, left superior, left inferior, and ectopic.

Results: The parathyroid adenomas were found to be in the left inferior in 50 patients (41.32% [Mean{X}, 0.41; 95% confidence interval {CI}, 0.324-0.506]), the right inferior in 40 patients (33.06% [X, 0.33; 95% CI, 0.248-0.422]), the left superior in 19 patients (15.7% [X, 0.157; 95% CI, 0.097-0.234]), the right superior in 10 patients (8.26% [X, 0.0826; 95% CI, 0.040-0.147]) and the ectopic in 2 patients (1.65% [X, 0.0165; 95% CI, 0.002-0.058]).

Conclusions: In this study, the most common site of adenoma is the left inferior parathyroid gland. This information provides parathyroid surgeons with a starting point when imaging fails to localize the site of the adenoma, which allows for the possibility of minimally invasive surgery especially if used in conjunction with intraoperative PTH.

HN12

Mandibular Pseudoepitheliomatous Hyperplasia Following Treatment for Oral Squamous Cell Carcinoma – W. Matthews, B. Everett, V. Falck, J. Dort, CALGARY, AB

Learning Objectives

1. Recognize the histological features of PEH.
2. Understand the pathophysiology of the condition.
3. Appreciate the clinical and histopathological features that may differentiate PEH from SCCA.

Abstract #148

Introduction: Pseudoepitheliomatous hyperplasia (PEH, or pseudocarcinomatous hyperplasia) is a benign mucosal lesion that histopathologically resembles well-differentiated squamous cell carcinoma (SCCA). PEH is found in areas of tissue trauma or irritation. As such, the lesion is thought to be a reparative process, whereby invading tongues of squamous epithelium project downward into the underlying tissue.

Objectives: We report on three cases of mandibular Pseudoepitheliomatous Hyperplasia. All patients had completed definitive treatment and presented with exposed mandibles. We present both a systematic review of the relevant literature, as well as an overview of the key histopathological features that will enable differentiation between PEH and recurrent or persistent SCCA.

Methods: We describe three cases of mandibular PEH. The pathophysiology, histology and clinical characteristics of the lesion are illustrated. A literature review using OVID, PubMed, and Cochrane databases was used to identify reported cases.

Conclusions: This case series illustrates the importance of differentiating PEH from a true cancer recurrence; failure to make do so could potentially lead to inappropriate treatment. The importance of interpreting histology within the clinical context is

emphasized. In addition to raising awareness about PEH, we also present key histopathological features that will enable differentiation between PEH and recurrent or persistent SCC.

HN13

The N3 Neck: Results Following Primary Chemoradiation Therapy – Moukarbel, R., et al. LONDON, ON

Learning Objectives

By the end of the presentation, the audience will be familiar with the current management strategy of advanced neck nodal metastasis as well as the expected outcomes following primary chemoradiation therapy.

Abstract #149

Objectives: Management of N3 advanced stage cervical metastasis of patients with squamous cell carcinoma of the upper aerodigestive tract remains controversial. Our objective was to assess treatment outcomes after primary chemoradiation therapy.

Methods: A retrospective review of our database of patients treated between 1999 and 2005 was conducted. Demographic data, tumor stage, treatment regimen and the need for surgical salvage were evaluated. Loco-regional and distant control rates as well as survival were calculated.

Results: 25 patients were identified for evaluation. The preliminary results show a high ultimate loco-regional control rate.

Conclusion: Definitive chemoradiation therapy is a valid primary treatment option. Planned neck dissection may not be required and may be reserved for salvage.

HN14

A Novel Tool for Objective Neck Fibrosis Measurement: A Validation Study – C. Chin, J. Franklin, R. Moukarbel, K. Fung, P. Doyle, LONDON, ON

Learning Objectives

By the end of this presentation the Otolaryngologist will be able to:

1. describe the morbidity associated with radiation to neck skin;
2. describe the mechanism of neck skin fibrosis due to radiation;
3. value the ability to quantify neck fibrosis using a validated tool;
4. respect the validity of the Cutometer in analyzing neck fibrosis.

Abstract #150

There is an increasing trend toward non-operative treatment for head and neck cancer. These treatments are known to cause significant morbidity specifically skin fibrosis. At present, there does not exist a validated tool for the quantification of this morbidity. The Cutometer is a device utilized to determine the properties of skin in other areas of the body including the breast and in other ailments including scleroderma. The goal of this study was to validate the Cutometer in the head and neck.

Methods: Prospective study of patients who have not undergone surgery nor radiotherapy to the neck. Patients were examined on both sides of the neck with two different Cutometer probes (2mm, 6mm). Both the Elasticity parameter and the Stiffness parameter were obtained for each measurement. Statistical analysis was performed to determine correlation between sides and as such patients served as their own internal controls.

Results: 51 patients were analyzed. The 2mm probe showed correlation $r=0.43$ and 0.63 for the Elasticity and Stiffness parameters ($P=0.0007$, $p<0.0001$ respectively). Similarly the 6mm probe showed a correlation of 0.424 and 0.55 for these parameters ($p=0.219$, $p=0.0032$). The 6mm probe was accurate in only 23 patients due to difficulties obtaining and maintaining suction and calibration.

Conclusions: The cutometer is a valid tool for measurement of neck skin stiffness and elasticity and therefore will be valuable in quantifying morbidity.

HN15

Osteomyelitis of the Sternoclavicular Joint: A Rare Complications of Total Laryngectomy – N. Yammine, T. Vu, H. Al Hakam, M. Black, MONTREAL, PQ

Learning Objectives

1. Recognise osteomyelitis as a rare complication of total laryngectomy.
2. Recognise the presentation of osteomyelitis.
3. Learn how to distinguish osteomyelitis from disease persistence/recurrence or bone metastasis.
4. Identify risk factors for osteomyelitis of the sternoclavicular joint after total laryngectomy.
5. Understand the treatment of osteomyelitis.

Abstract #151

Objective: To present the 11th reported case of osteomyelitis (OM) of the sternoclavicular joint (SCJ) as a rare complication following a total laryngectomy with significant diagnostic and treatment dilemmas. The patient's risk factors for OM of the SCJ

and treatment modalities are highlighted. Then, a review and analysis of previously reported cases is carried out and recommendations are proposed.

Methods: A 59 year old man with squamous cell cancer of the larynx presented with airway obstruction and required an emergency tracheostomy. The patient was treated with neoadjuvant chemotherapy followed by a total laryngectomy, subtotal thyroidectomy and bilateral neck dissections. One month postoperatively, the patient presented with a granulating mass on the left side of the stoma, erythema and tenderness over the left sternoclavicular joint.

Results: A biopsy from the stoma revealed reactive granulation tissue, and a gallium scan confirmed the diagnosis of osteomyelitis. Following aggressive antibiotic treatment the patient recovered and commenced post-operative radiotherapy treatment.

Conclusion: Osteomyelitis of the SCJ post total laryngectomy is uncommon and must be distinguished from disease persistence/recurrence and bone metastasis. Adequate diagnosis and treatment are imperative.

LARYNGOLOGY

L1

A Case Report: Familial Relationship in Idiopathic Subglottic Stenosis – P. Chopra, CALGARY, AB

Learning Objectives

1. The learner should be able to define Idiopathic Subglottic stenosis and identify its etiologies.
2. The learner should recognize a new possible familial etiological basis of idiopathic subglottic stenosis presenting in adulthood.
3. The learner should recognize management and success of management of Idiopathic Subglottic Stenosis.

Abstract #152

Subglottic Stenosis implies significant narrowing of the subglottic airway. It can be classified as either congenital or acquired. In adults, almost all cases are of the acquired variety. The possible etiologies of subglottic stenosis in adults include trauma (intubation or tracheostomy), severe upper respiratory tract infections, gastroesophageal reflux disease and possibly a link to the female hormone estrogen. In many cases however, the exact etiology for the subglottic stenosis is not certain. Female's predominately present with very unimpressive histories as to the cause of their stenosis. This has led to the term Idiopathic Subglottic Stenosis. To date there are no studies or case reports in the Literature which describe a familial relationship in Idiopathic Subglottic Stenosis. We present a case of two sisters who present in adulthood with Idiopathic Stenosis. Interestingly, one has responded well to endoscopic management, while the other has failed endoscopic management and has done very well with cricotracheal resection. Each case is reported and the etiology and management of Idiopathic Subglottic Stenosis is discussed.

L2

Vocal Cord Collapse During Phrenic Nerve Paced Respiration in Congenital Central Hypoventilation Syndrome – M. Domanski, D. Preciado, WASHINGTON, DC

Learning Objectives

By the end of this session, the sleep medicine physician should be able to explain how phrenic nerve pacing can result in respiratory vocal cord collapse in a patient with congenital central hypoventilation syndrome.

Abstract #153

Objective: To document the role of the Bernoulli effect in vocal cord collapse during phrenic nerve paced respiration.

Methods: We describe a case of passive vocal cord collapse during phrenic nerve stimulation in a patient with CCHS. As far as we know, this is the first report of this etiology of airway obstruction. The patient, a 7 year old, with CCHS and normal waking vocal cord movement, continued to require nightly continuous positive airway pressure despite successful utilization of phrenic nerve pacers. On direct laryngoscopy and bronchoscopy, the patient's airway was observed while the diaphragmatic pacers were sequentially engaged.

Results: No abnormal vocal cord stimulation was witnessed during engaging of either phrenic nerve stimulator. However, the lack of normal inspiratory vocal cord abduction during phrenic nerve paced respiration resulted in vocal cord collapse and partial obstruction. Bilateral phrenic nerves stimulation resulted in more vocal cord collapse than unilateral stimulation.

Conclusion: The lack of vocal cord abduction on inspiration presents a limit to phrenic nerve pacers. Furthermore, this case suggests a possible etiology of paradoxical vocal cord movement.

L3

Current Practices in the Management of Spasmodic Dysphonia – A. Eskander, N. Hogikyan, S. McBride, K. Fung, LONDON, ON

Learning Objectives

After viewing this poster, CSO members and guests, will have a better understanding of the current practice trends in the treatment of adductory spasmodic dysphonia. They will be able to describe the most common guidance technique, route of administration, whether injections are bilateral or unilateral, and frequency of re-injection with botulinum toxin for the treatment of this disorder.

Adductory Spasmodic Dysphonia (ADSD) is treated with botulinum toxin (Botox) injections of the thyroarytenoid muscles. Currently, there are no consensus guidelines regarding many aspects of administration of this drug.

Abstract #154

Objective: To assess current practice patterns amongst physicians who treat ADSD.

Design: Cross sectional survey study.

Outcome Measures: Survey questions will assess guidance technique, route of administration, whether injections are bilateral or unilateral, drug of choice, initial dose, frequency of re-injection, whether Botox vials are shared amongst multiple patients or frozen for future use.

Study population: Canadian laryngologists obtained from the CSO-HNS member database and American laryngologists obtained from the ALA (American Laryngological Association) member database.

Results will be presented.

L4

Predictors of Cardiac Surgery Related Vocal Cords Fixation: The Halifax Voice Lab Experience – A. Hilal, T. Brown, HALIFAX, NS

Learning Objectives

1. To review the clinical presentation of bilateral vocal cords fixation and relevant literature.
2. To identify underlying pathogenesis of bilateral vocal cords fixation after cardiac surgery and prolonged intubation.
3. To be aware of risk factors involved in the development of bilateral vocal cords fixation in an effort to minimize them.

Abstract #155

Objectives: To identify risk factors and possible mechanisms involved in the pathogenesis of a uni- or bilateral vocal cords fixation (VCF) after open heart surgery at Dalhousie University.

Hypothesis: A higher incidence of VCF may be found in cardiac patients with a history of prolonged or repeated intubation. Larger sized tubes can also be deemed to be a significant risk factor.

Methods: We are conducting a retrospective chart review at the Voice Laboratory of Dalhousie University, Halifax, NS. A Total of 12 charts is under investigation for the period 2007- 2008 who were originally referred by their cardiac surgeons for postoperative VCF. Demographics, type of the cardiac procedure performed, method and duration of intubation and size of the endotracheal tube used are analyzed. The severity and clinical course of VCF and its impact on patient's voice and airway will also be included in this study.

Conclusion: Open heart and aortic surgery are commonly associated with a higher post operative voice and airway morbidity. VCF with or without paralysis seem to be the main responsible pathology. A positive correlation could exist between certain intubation parameters and the severity of VCF. Involved physicians need to be more aware of such risk factors.

L5

Laryngeal Angiomyxolipoma: A Rare Case Study – T. Kherani, H. Seikaly, D. Cote, EDMONTON, AB

Learning Objectives

This poster seeks to educate the otolaryngology learner or practitioner about angiomyxolipomas, a rare tumour which is part of the differential of laryngeal masses through a description of an unusual clinical presentation and review of a rare clinical case.

Abstract #156

Objectives: Angiomyxolipoma (AML) is a rare tumor most commonly found in the kidney and liver. While it is extremely rare to find it in other parts of the body, it is even more uncommonly found in the head and neck region. Our objective was to present this unusual tumor and a rare case of AML arising in the larynx.

Methods: This case report centers on an eighty-three year old man who presented to the Otolaryngology outpatient clinic at the University of Alberta with a three and a half year history of globus sensation and discomfort along with newly presenting voice changes. On fiberoptic laryngoscopic examination, a large cystic mass was discovered on his lateral pharyngeal wall, which was herniating into the arytenoids and right laryngeal structures. Computerized tomography of the neck showed a 3cm oval shaped well-defined nodule located in upper airway, above the vocal cords and behind the epiglottis. The patient underwent laser excision of right pharyngeal polyp. Grossly it was a pedunculated, encapsulated polypoid mass. Microscopic features were consistent with an angiomyxolipoma.

Conclusion: This unusual laryngeal mass is similar to many non-renal, non-hepatic AMLs; based on currently developed hypotheses, it fits into a group of AML tumors called mucocutaneous angiomyolipoma (MCAML).

L6

Laryngeal Reinnervation After Vagal Paraganglioma Resection: A Case Report – E. Lamarre, R. Lorenz, C. Milstein, J. Scharpf, CLEVELAND, OH

Learning Objectives

By the end of this presentation the conference participant will be acquainted with a novel laryngeal reinnervation technique in the setting of vagal paraganglioma resection.

Abstract #157

Definitive surgical treatment of vagal paragangliomas involves the sacrifice of the vagus nerve. Notwithstanding the possibility of paresis of adjacent cranial nerves, the associated morbidities of vagal nerve resection (hoarseness, laryngeal anesthesia, and soft palate paralysis for high vagal paralysis) often require concomitant surgical procedures for correction. Optimal management of vagal nerve defects in this setting are controversial, however medialization procedures are most commonly reported in addressing the vocal fold paresis. We present a case report of a laryngeal reinnervation procedure performed after resection of a vagal nerve paraganglioma. The patient underwent a left ansa cervicalis nerve to right recurrent laryngeal nerve neuroplasty, a right great auricular to right superior laryngeal nerve neuroplasty, and a free nerve interposition graft from the left cricothyroid muscle to the right cricothyroid muscle as a strategy for functional reconstitution. The patient had excellent voice quality and normal swallowing as early as 7 months postoperatively. We present details of the surgical procedure and postoperative stroboscopy results.

L7

30-Year Delayed Presentation of Hyoid Strangulation Fracture: Case Report and Review of the Literature – M. McNeil, H. Amodi, T. Brown, HALIFAX, NS

Learning Objectives

1. To review the differential diagnosis and investigation of patients with globus sensation.
2. To understand the anatomy and pathology of the hyoid bone, including trauma, neoplasia, and bursitis (hyoid syndrome).

Abstract #158

Reports of hyoid fractures are most commonly described in the context of either acute airway management or autopsy reviews. The authors present an unusual case of a 60-year old male with increasing globus sensation who suffered an isolated hyoid strangulation fracture 30 years previously. We describe the presentation, diagnosis, and surgical management of this case, and review the literature with regards to isolated hyoid fractures. We discuss the anatomy, presentation, diagnosis, and treatment of such injuries.

L8

Vascular Malformation of the Larynx – A Novel Use of Endoloop® Sutures as an Aid to Surgical Resection – D. O'Connell, D. Cote, M. Allegretto, EDMONTON, AB

Learning Objectives

Following review of this poster the residents, fellows and practicing otolaryngologists will have increased knowledge in treating laryngeal vascular malformations as well as adding a novel use of existing technology in the treatment of this complex disease process.

Abstract #159

Objectives: To describe a novel use of Endoloop™ (Johnson & Johnson, Nashville TN) laparoscopic sutures in the treatment of laryngeal vascular malformations.

Methods: Case report

Results: A 29 year old otherwise healthy woman presented to the Otolaryngology clinic with a 2 year long history of worsening shortness of breath with exertion. Fiberoptic laryngoscopy revealed a large 5cm vascular mass arising from the right aryepiglottic fold. This lesion had a ball-valve effect on inspiration and was transiently obstructing the glottis. Due to the potential life-threatening nature of this finding the patient did elect to undergo urgent surgical excision of the lesion. Due to the highly vascular nature of the mass, hemostatic control presented a challenge. Endoloop™ 2-0 PDS suture loops were passed around the lesion ligating the base of the lesion prior to excision with a CO2 laser. Excellent hemostatic control was obtained with the Endoloop sutures and the obstructing lesion was removed without complication. At 3, 6, and 12 month follow-up assessments there was evidence of residual vascular malformation however no new growth or obstruction of the airway.

Conclusions: The Endoloop™ suture was initially developed for laparoscopic procedures and has been shown to be safe and effective. This report describes a novel use of this technology an excellent alternative to traditional trans-oral suturing techniques when ligating vascular malformations of the upper aerodigestive tract.

L9

The Development of a Large Internal Laryngocele in the Presence of a Zenker's Diverticulum – S. Tan, L. McLean, OTTAWA, ON

Learning Objectives

After reading this poster the learner will be able to:

1. appreciate the exceedingly rare finding of the coexistence of a laryngocele and a Zenker's Diverticulum (ZD);
2. understand the accepted theories regarding the development of ZD and laryngoceles in isolation;

3. hypothesize as to the pathophysiologic mechanisms that might lead to the development of a laryngocele as a sequelae of ZD.

Abstract #160

Objectives: To present an extremely rare case of the simultaneous presentation of a Zenker's diverticulum (ZD) and a large laryngocele and to discuss the possible pathogenesis of this unusual combination.

Methods: A case report and review of literature.

Results: A 68 year old male presented with a 6 month history of dysphagia and waterbrash. Flexible fiberoptic nasolaryngoscopy was normal. A barium swallow demonstrated a 3.1cm ZD. Two months later, while awaiting excision of the ZD, the patient reported the presence of a new mass in his oropharynx when he coughed. He could palpate and reduce the mass as needed. Laryngoscopy revealed a large internal laryngocele which extended above the superior tip of the epiglottis. There was no evidence of laryngeal or esophageal carcinoma

Conclusion: Coexistence of ZD and a laryngocele is exceedingly rare with only one case reported in the literature. Possible pathophysiologic mechanisms for development of a laryngocele in the presence of ZD could include: 1. Increased transglottic pressure due to chronic cough caused by spillage of contents from the ZD; 2. Increased transglottic pressure due to abnormal pharyngeal muscle function; 3. Chronic inflammation from the ZD leading to obstruction of the proximal saccule by a post-inflammatory stenosis.

OTOLOGY

O1

Tympanic Membrane Perforation and Mixed Hearing Loss From Electric Shock Ear Torture: A Case Report – B. Barber, D. Cote, R. Liu, EDMONTON, AB

Learning Objectives

By the end of this session, clinicians should be generally aware of torture sequelae in healthcare, recognize the characteristic effect of electric shock torture to the tympanic membrane, and apply appropriate management strategies to ameliorate damage.

Abstract #161

Background: Many medical reports describing the atrocities of physical torture methods used in interrogation and imprisonment have been published. Knowledge of torture methods assists the clinician in identifying and evaluating injuries sustained by affected patients.

Methods: We present the case of a 58-year-old year-old Chilean male with a left tympanic membrane perforation and mixed hearing loss from electric shock application. The patient was imprisoned and tortured by the military government led by Augusto Pinochet in 1973. His interrogators placed electrical lead in both ears, and passed a current through the wire, causing a left antero-inferior tympanic membrane perforation, otalgia, tinnitus, and bilateral hearing loss in the following years. A detailed description of the method of torture, defect incurred, and management strategy is given.

Results: The patient underwent a left tympanoplasty. The tympanic membrane was completely intact at the 6-week follow-up. There was a modest improvement in his conductive hearing loss, and significantly decreased otalgia. The sensorineural component of hearing loss was unchanged.

Conclusions: Recognition and evaluation of characteristic torture sequelae are valuable skills for physicians, as they may facilitate the formulation of better treatment strategies and care for patients.

O2

A Case of Bilateral Internal Auditory Canal Osteomas – M. Brake, D. Morris, M. Taylor, J. Trites, R. Hart, HALIFAX NS

Learning Objectives

1. To review the clinical presentation of internal auditory canal osteomas.
2. To discuss management options and the data available regarding management outcomes.
3. To recognize that surgery is not always necessary for management.

Abstract #162

Osteomas of the skull base are rare, benign, slow-progressing growths of dense cortical bone. Osteomas occurring in the internal auditory canal (IAC) are extremely rare. Patients with these lesions typically present with dizziness, sensorineural hearing loss and/or tinnitus. Although there have been documented cases where surgical excision has improved these symptoms, symptomatic relief is not always achieved with surgical management.

Here we present the second reported case of bilateral osteomas of the internal auditory canal. An 82 year old female presented with acute onset of dizziness without a history of trauma and ear infection. She had reported two similar episodes occurring few years prior with symptoms persisting for only a few days. Audiography showed presbycusis only. A CT scan and MRI identified bilateral IAC osteomas. The patient was treated conservatively, monitored and had complete resolution of her symptoms.

O3

Lateral Intracanalicular Growth of Vestibular Schwannomas – M. Clark, B. Westerberg, P. Mick, VANCOUVER, BC

Learning Objectives

By the end of this session, the General Otolaryngologist will be able to:

1. understand the lateral growth pattern of vestibular schwannomas.

In addition, the Neurotologist (and Neurosurgeon) will:

1. know how recently imaging needs to be acquired prior to surgery;
2. have a better guide to surgical planning.

Abstract #163

Objective: 1) To determine the lateral intracanalicular growth pattern of vestibular schwannomas that have been shown to be growing at the cerebello-pontine (CP) angle by serial scanning; 2) To help form a policy regarding the need for recent pre-operative imaging of these tumours.

Methods: Inclusion criteria was the presence of a unilateral vestibular schwannoma demonstrating growth of >1mm per year on two consecutive magnetic resonance scans, and at least one subsequent scan following documentation of growth of the tumour. This identified 36 suitable patients from a review of 487 patients identified as having vestibular schwannoma (between 1994 & 2007). Each scan of the included patients was reviewed and the lateral growth measured along the axis of the internal auditory canal (IAC using the measuring tool within the scan viewing software.

Results: The lateral growth pattern results will be presented, along with a protocol detailing how recent the latest scan should be prior to the date of surgery.

Conclusions: Given that the extent of lateral growth of a vestibular schwannoma within the IAC can influence the surgical approach for subsequent tumour removal, the results give justification to the timing of pre-operative imaging and so help in surgical planning.

O4

Wegener's Granulomatosis of the Skull Base – M. Grandy, M. Taylor, J. Trites, R. Leblanc, M. Bullock, R. Hart, HALIFAX, NS

Learning Objectives

1. To discuss a rare presentation of Wegener's Granulomatosis.
2. To become familiar with the appropriate diagnostic techniques related to Wegener's.
3. To learn the appropriate treatment and management of the condition.
4. To become aware of the few existing cases presented in the literature.

Abstract #164

Wegener's granulomatosis is characterized by necrotizing, granulomatous inflammation of the upper and lower respiratory tract, small and medium artery vasculitis and focal or proliferative glomerulonephritis. The incidence of Wegener's presenting at the skull base is exceeding low with only 4 cases reported in the literature. The following is a case of a 36 year old female who presented with recurrent severe headaches and was found to have a tumor-like mass at the base of her skull eventually leading to the diagnosis of Wegener's granulomatosis of the skull base. The initial presentation, investigations and treatment are discussed, followed by a brief review of the literature and discussion of the key learning points from the case.

O5

Hearing Abnormalities in Vitiligo Patients: A Controlled Blinded Study – Orgobi, A., Hagr, A., Alghamdi, K., RIYADH, SAUDIA ARABIA

There are contradictions in the literature regarding the hearing abnormalities in vitiligo patients. Therefore, it is important to do more research in this field as been recommended in the literature.

We aimed to use conventional audiological tests (pure tone audiogram, impedance and otoacoustic emission) to re-investigate these issues to answer the following:

1. Are there hearing abnormalities in vitiligo patients more than non-vitiligo population (the control group)?
2. If yes, what are the variables which affect this relationship?

Abstract #165

Objectives: Our main objective is investigating the relationships between vitiligo and hearing loss.

Methods: This study is going to be controlled and blinded.

1. Recruiting 50 patients from vitiligo clinic and 50 non-vitiligo healthy participants (control group).
2. Doing hearing tests for both groups.
3. Statistical comparison for hearing tests between vitiligo and control groups. Moreover, subgroup analysis in vitiligo patients will be done to investigate any relation between hearing loss and severity, type as well as duration of vitiligo. .

Result: The normative data will be analyzed using SPSS software. Multiple linear regression will be used to identify statistically significant associations between vitiligo and the hearing loss.

Conclusion: The statistical comparison for hearing tests between vitiligo patients and control groups will be done. Moreover, subgroup analysis in vitiligo patients will be done to investigate any relation between hearing loss and severity, type as well as duration of vitiligo.

O6

Otologic and Audiologic Challenges in Fibrous Dysplasia of the Temporal Bone and Skull Base – R. Pennings, R. van Wijhe, D. Morris, HALIFAX, NS

Learning Objectives

After viewing this poster, the interested otorhinolaryngologist will be able to list the possible audiologic and otologic complications in patients with fibrous dysplasia and take these in consideration when they see a patient with fibrous dysplasia in their own clinic.

Abstract #166

Objectives: To describe a number of surprising otological and audiological effects of fibrous dysplasia of the temporal bone and skull base.

Methods: Two patients are presented.

Results: The first patient had extensive involvement of temporal bone and skull base. Otological complications began with recurrent otitis externa due to progressive narrowing of the bony external auditory canal. Several surgical canaloplasties failed due to progression of disease. As conventional hearing aids were poorly tolerated a BAHA titanium implant was placed, but osseointegration in the fibro-dysplastic bone was incomplete and the fixture was lost. Mid-canal stenosis became extreme causing a deep meatal 'cholesteatoma', requiring tympanomastoidectomy. The newly widened ear canal failed to self-clean and a blind sac closure was performed. Remaining rehabilitation options including middle ear drivers are discussed. The second patient is a pilot who presented with inability to equalize middle ear pressure on one side. A CT-scan showed that his Eustachian tube was encroached by fibrous dysplasia. He was treated by tube insertion and this relieved his symptoms. 3D reconstructions of high-definition CT images show the extent of disease in both patients.

Conclusions: Fibrous dysplasia of the temporal bone and skull base may give rise to some surprising otological and audiological challenges

O7

Is There a Correlation Between Tensor Tympani Spasm and Low-frequency Hearing Loss? – R. Pennings, R. van Wijhe, O. Majdalawieh, W. Alian, M. Bance, HALIFAX, NS

Learning Objectives

By the end of this presentation the audience will be able to describe the effect of pulling on the tensor tympani on movements of the stapes and tympanic membrane and how this possibly relates to Ménière's disease.

Abstract #167

Objectives: To analyze the effect of tensor tympani contraction in the cadaveric temporal bone on tympanic membrane and stapes movements in order to evaluate the hypothesis that tensor tympani spasms may lead to Ménière's disease. A second objective is to identify characteristic vibration patterns that can be recognized in clinic.

Methods: Five cadaveric temporal bones were used for analysis. Sound was applied through the external auditory canal and vibration movements of stapes and tympanic membrane were recorded by scanning laser doppler vibrometry. A 6.0 ethilon suture was placed around the tensor tympani and pulled superiorly with increasing weight forces: 0, 13, 26, 52, 76 and 100 grams.

Results: Vibrations in the lower frequencies were damped with increasing weight force. Vibrations in the higher frequencies remained relatively stable on increasing pulling of the tensor tympani.

Conclusions. These results indicate that tensor tympani spasm may lead to low-frequency hearing loss as is commonly seen in Ménière's disease.

O8

Dural Arteriovenous Fistulas of the Hypoglossal Canal – D. Philippon, J. Garipey, G. Fradet, QUEBEC, PQ

Learning Objectives By the end of the session the general ENT surgeon will be able to be more familiar with the ENT manifestations of a dural arteriovenous fistula and the treatment options available.

Abstract #168

Dural arteriovenous fistulas (DAVF) are arteriovenous shunts from a dural arterial supply to a dural venous drainage channel. They are often described according to the venous sinus they are related to or the anatomic location of the fistula.

Fistulas may have high or low flow and unilateral or bilateral supply. Arteriography is the gold standard of diagnosis. The majority of DAVF's are acquired, idiopathic lesions. The prevalence of DAVF is unknown, as some remain asymptomatic for years. They represent approximately 10% to 15% of all intracranial vascular malformations. Patients typically present between 40 and 60 years.

Around 50% of DAVF occurred in the posterior fossa, being transverse or sigmoid sinus. Cavernous sinus accounts for 10 to 15%. They are usually solitary but multiplicity has been reported in less than 7%.

Symptoms depend on multiple factors such as location, pattern of venous drainage and magnitude of flow. Nonhemorrhagic symptoms of a DAVF of the posterior fossa commonly include pulsatile tinnitus and headache.

The hypoglossal canal is thought to be an unusual location for DAVFs to occur. Literature has evidenced 17 cases so far. We report the case of a patient who presented to the ENT clinic with a left-side tongue deviation and a left pulsatile tinnitus in whom a DAVF was found to drain in the hypoglossal canal.

O9

Langerhans Cell Histiocytosis of the Temporal Bone with Intra-cranial Involvement : A Report of Two Adult Cases and Review of the Literature – J. Venzina, N. Audet , G. Fradet, QUEBEC, PQ

Learning Objectives

1. The participant will learn about the epidemiology, classification, clinical presentation, diagnosis and treatment of the otologic forms of Langerhans' cell histiocytosis (LCH).
2. The participant will recognize that LCH might present at an advanced stage with cerebrospinal fistula.

Abstract #169

Objective: To describe two adult cases of Langerhans cell histiocytosis of the temporal bone, and to report the unusual presenting symptom of a CSF fistula.

Patients: Two adult Caucasian females presented in a tertiary care center in Quebec, Canada, one with a new onset of CSF fistula, the second one with pain over her left mastoid. Both had an important destructive lesion of the temporal bone and were diagnosed with Langerhans cell histiocytosis on biopsy.

Interventions: They underwent surgical resection with reconstruction of the posterior fossa and tegmen. Both patients had relapse less than one year following surgery, and were finally treated with chemotherapy.

Main Outcome and Results: They were both free of disease on a 3 years follow-up. No recurrence of the CSF leak was observed on our first patient.

Conclusions: Langerhans cell histiocytosis of the temporal bone is a rare disease in the adult population, with only 2 cases reported in the literature. 11 paediatric cases were previously reported. To our knowledge, we report the first case of CSF fistula as an initial symptom.

O10

Primary Squamous Cell Carcinoma of Middle Ear: Case Presentations and Review of Literature – M. Clark, B. Westerberg, N. Shoman, VANCOUVER BC

Learning Objectives

By the end of this session, the General Otolaryngologist will be able to:

1. apply a treatment algorithm to patients with primary SCC of the middle ear in the absence of chronic otitis media;
2. counsel patients on treatment and prognosis of primary SCC of the middle ear.

Abstract #141

Objective: To review cases of primary middle ear squamous cell carcinoma (SCC) that have presented to a Provincial tertiary referral Otolaryngology clinic, and to review the literature to determine an evidence-based treatment protocol.

Methods: Two patients were identified, who presented with SCC lesions isolated to the middle ear. Their cases are discussed. A systematic review of the literature was performed to identify similar cases. Inclusion criteria for these reports were those where patients had SCC occurring in the absence of chronic suppurative otitis media and isolated to the middle ear.

Results: Protocol for treatment based on local experience and evidence from the systematic review of case report.

Conclusions: Primary middle ear SCC is a rare condition, that can be successfully treated with a multiple modality treatment protocol when detected early.

PEDIATRIC OTOLARYNGOLOGY

P1 Airway Obstruction and Third Branchial Anomaly: A Case Report and Literature Review – A. Lee, B. Korman, HAMILTON, ON

Learning Objectives

1. To describe a unique case of respiratory distress in a patient with a third branchial anomaly.
2. To outline the features that differentiate between third and fourth branchial anomalies.
3. To review the literature and discuss the diagnosis and management of third branchial anomalies.

Abstract #170

Third branchial anomalies are rare, accounting for approximately 3-10% of all branchial anomalies. A review of the literature demonstrates several case reports of patients with a third branchial anomaly. Typically, these patients present with a neck mass that is almost exclusively left sided. Rarely, respiratory distress is found to be the initial presenting symptom. We report a case whereby a four month old boy presents with respiratory distress and a uniquely right sided neck mass. Immediate surgical intervention was performed to secure an airway and excise the lesion. Final pathology results revealed findings consistent with a branchial cleft cyst. This is a rare case of a third branchial anomaly with an atypical initial symptom of respiratory distress. We present an update on the recent literature, including the investigation, challenges in diagnosis, and management of third branchial anomalies.

P2

Two Cases of Nasopharyngeal Stenosis After Multiple Adenoidectomies – V. Cheung, J. Manoukian, MONTREAL, PQ

Learning Objectives

By the end of this poster presentation, medical students and residents should be able to:

1. describe the pathophysiology of nasopharyngeal stenosis in patients post adenoidectomy;
2. list possible risk factors associated with nasopharyngeal stenosis in patients post adenoidectomy;
3. value the importance of preventive measures in nasopharyngeal stenosis management;
4. consider actions they could take in patients for adenoidectomy or post nasopharyngeal stenosis revision to decrease risk of nasopharyngeal stenosis occurrence and recurrence.

Abstract #171

Objectives: Discuss risks factors contributing to nasopharyngeal stenosis (NPS) post adenoidectomy and management considerations.

Methods: Montreal Children Hospital charts within the last ten years with "nasopharyngeal stenosis", "choanal stenosis" and "adenoidectomy" were reviewed for NPS risk factors and for management considerations. Known risk factors and management were also discussed.

Results: Two cases of NPS post multiple adenoidectomies (cold curettage and suction ablation) were obtained; they were both managed through excision, dilatation and stenting using endotracheal tubes for 10 days. NPS recurred in one patient who had velopharyngeal gastric reflux ("bad oral taste"). Patient was found to have a hiatal hernia that was repaired by fundoplication despite response to medical management. NPS recurred post second revision (adhesionolysis, inferior turbinectomies, tissue removal and stenting for 5 weeks) and fundoplication, requiring a third and final revision (Functional Endoscopic Sinus Surgery, granulation tissue removal and Mytomycin-c application).

Conclusions: In NPS management, stenosis location may prevent use of mucosal flaps. Risk factors for NPS such as prolonged/ abnormal healing, multiple adenoidectomies, silent reflux should be monitored. Preventive measures such as prolonged stenting, measured mucosal / adenoid removal / electrocautery use and postponing surgery in presence of local infection are important in this highly recurrent pathology.

P3

Diagnosis and Management of Spontaneous CSF Otorrhea in Children: 2 Case Reports – T. Al-Khatib, M. Schloss, C. Saint-Martin, MONTREAL, PQ

Learning Objectives

At the end of the presentation, the learner will understand the clinical presentation of spontaneous CSF otorrhea, diagnostic methods, routes of CSF leakage pathways, and management options.

Abstract #172

Background: Spontaneous CSF fistula in congenital malformations of the inner ear is rare. It is a potentially life-threatening condition that necessitates rapid intervention.

Objective: To describe the clinical presentation, diagnosis, management, and outcome of two children with congenital spontaneous cerebrospinal fluid otorrhea.

Method: 2 Case reports.

Results: Case 1: A 10-month-old boy presented with meningitis and right subdural empyema. A tympanostomy tube was inserted to treat a presumed otitis media source. A CSF gusher was encountered. CT scan/MRI of the temporal bone revealed a severe type of inner ear malformation. ABR showed a severe right sided hearing loss. Exploratory tympanotomy revealed the leak in the area around the oval window. Stapedectomy, packing of the vestibule with fat, muscle, and fascia, followed by prosthesis placement for stabilization was performed.

Case 2: A six year-old boy presented with an incidental CSF gusher during tympanostomy tube placement. Imaging revealed a widened internal auditory canal and fallopian canal. Exploratory tympanotomy with transmastoid repair of the leak was performed.

Conclusion: Both cases recovered well with no further leak. Translabyrinthine and middle cranial fossa approaches were avoided. The two surgical methods described provide a less invasive approach to the otolaryngologist for repair of CSF leaks.

P4

An Unusual Developmental Anomaly of the Upper Lip: Case in a 3-month-old Infant – B. Wu, M. Husein, N. Chan, VANCOUVER, BC

Learning Objectives

By the end of the poster presentation session, the medical students, residents, otolaryngologists and pathologists will gain exposure and understanding of the presented rare congenital lesion and be able to describe the characteristic clinical and histological findings based on the evidence from our case report and literature review.

Abstract #173

Objectives: Rhabdomyomatous mesenchymal hamartoma (RMH) is a rare benign congenital lesion of the skin. Since its initial description in 1986, there are only 31 cases in the English literature. RMH usually presents as solitary nodules or skin tags involving areas with superficial striated muscle, such as the nose and chin. To date, there has been only 1 reported case of lesion in the lip in an infant with multiple congenital anomalies including cleft lip and palate, amniotic bands and syndactyly. Here, we describe an otherwise healthy 3-month-old infant who presented with a congenital 1cm pedunculated mass of the left upper lip.

Methods: Case report and literature review.

Results: The lesion was completely excised under general anesthesia. Histology revealed a hamartomatous lesion composed of benign skin, skeletal muscle, adipose tissue and multiple adnexal structures. There are no features of dysplasia or malignancy.

Conclusions: RMH is a benign developmental anomaly of dermis and soft tissues structures with unknown etiology. It can be treated with surgical excision with excellent cosmetic outcome. No recurrences of RMH have been reported so far. Current hypotheses for this unusual lesion include genetic predisposition to hamartoma formation, aberrancy in embryonic mesodermal migration and possible association with Delleman's syndrome.

RHINOLOGY

R1

Safety and Feasibility of Endoscopic Dilatation of Paranasal Sinus Ostia (Balloon Sinuplasty) – F. Al-Qattan, A. Ibrahim, K. Al Abdelhadi, A. Alwael, M. Hafez, M. Al Adwani, KUWAIT

Learning Objectives

To ascertain the safety and feasibility of the endoscopic dilatation of paranasal sinus ostia (balloon sinuplasty) in patients with rhinosinusitis.

Abstract #174

Innovative catheter-based technology has improved treatment of several conditions such as coronary artery disease, peripheral vascular disease and stroke. Recently, catheter devices have been developed for the paranasal sinuses. The objective of this study was to ascertain the safety and feasibility of the newly developed devices in the management of patient with rhino-sinusitis.

Methods: 16 patients with chronic sinusitis treated with balloon sinuplasty targeting the sinus ostia of the frontal, maxillary and sphenoid sinuses. The primary end points were intraoperative procedural success and absence of adverse events.

Results: 44 sinus ostia were successfully catheterized and dilated. No adverse events occurred. Mucosal trauma and bleeding appeared to be less compared with the functional endoscopic sinus surgery techniques.

Conclusions: Balloon sinuplasty appears to be relatively safe and feasible.

R2

Purely Endoscopic versus Endoscopic Assisted Approaches for Pituitary Tumors: A Cost Analysis – J. Khetani, S. Banglawala, D. Sommer, K. Reddy, HAMILTON, ON

Learning Objectives

By the end of this poster presentation, the otolaryngology resident will be able to appreciate the benefits and disadvantages of purely endoscopic transphenoidal surgery for pituitary tumors when compared to traditional endoscopic-assisted techniques. In particular, by comparing direct costs from the perspective of the Ministry of Health and Long Term Care, this presentation will help elucidate its role in our fiscally restrained health care system.

Abstract #175

Objective: Advancing technology and expertise in the purely endoscopic management of sellar tumors has demonstrated improvements in morbidity and effectiveness when compared to traditional endoscopic-assisted approaches. However, in a health care system with limited resources, an economic analysis is warranted to help integrate any novel surgical approach. This study will attempt to illustrate the direct cost comparison between these two surgical strategies.

Methods: Retrospective case series of 40 consecutive transphenoidal surgeries; the first 20 patients undergoing an endoscopic-assisted approach and the next 20 using a purely endoscopic approach at a tertiary care center.

Results: The demographics were similar between both cohorts. Patients in the purely endoscopic group had a shorter mean operative time and fewer cases of residual tumor compared to patients in the endoscopic assisted cohort. Length of hospital stay in

the purely endoscopic category was significantly shorter than in the endoscopic assisted group. Direct costs were slightly less in the purely endoscopic group.

Conclusions: Purely endoscopic surgery for sellar tumors have been demonstrated to decrease operative time, reduce complications, improve tumor resection and decrease hospital stay when compared to traditional endoscopic-assisted approaches. This study now provides evidence that purely endoscopic surgery also has a reduced direct cost.

R3

How to Deal with the Middle Turbinate in Order to Open a Good Nasal Corridor for Pituitary Surgery – F. Lavigne, A. Evrad, N. McLaughlin, V. Tremblay, M. Bojanowski, MONT-ROYAL PQ

Learning Objectives

1. Review the advantages of endoscopic surgery of the pituitary gland.
2. Revision of the anatomic landmarks that leads to the sella turcica.
3. Post-op care after pituitary surgery.
4. Revision of the surgical anatomy of the middle turbinate.

Abstract #176

To assure accurate endoscopic dissection of intrasellar pathologies, we have adopted over the last few years bimanual dissection technique. One surgeon is using both hands while the other is controlling the endoscopic view. The operative procedure may be divided in the nasal and the intrasellar stage. A wide corridor needs to be created to allow two instruments in the right nostril and work at angle positions into the sphenoid sinus.

This study is a review of the surgical anatomy during regular pituitary surgery and evaluation of the technique limitations in 10 cadavers when preservation of the mucosa of the head of the middle turbinate is achieved VS with partial resection. Preservation of the mucosal head is possible in most cases (17/20 sides) and gives sufficient access. The rest of the dissection approach did not traumatise the preserved mucosa in clinical and cadavers work and landed to a quasi normal appearance in the post-op cases. The technique will be described.

The middle turbinate has a vertical component that obstructs the visualisation of the upper turbinate and of the sphenoidal recess. Partial section or mucosal preservation of the middle turbinate are possible and open the corridor for surgery and post-op care.

R4

Endoscopic Resection of Pterygopalatine Chondrosarcoma – A Case Report and Review of the Literature – P. Thomas, A. Hu, J. Franklin, B. Rotenberg, LONDON, ON

Learning Objectives

1. Upon reviewing the poster observers will have an improved understanding of the management of nasal chondrosarcomas.
2. Upon reviewing the poster, observers will have a greater appreciation for the growing utility of endoscopic minimal access surgery in managing nasal tumors.
3. Upon reviewing the poster, observers will gain an improved appreciation for nasal anatomy.

Abstract #177

Introduction: The nose and paranasal areas are rare sites of chondrosarcoma presentation. Surgery remains the main curative treatment for chondrosarcomas. Among the surgical approaches, endoscopic surgery provides a means of minimizing, if not avoiding, cosmetic and functional deformity while still allowing for visualization, hemostasis and neurovasculature protection.

Methods & Results: We present a case of a pterygopalatine chondrosarcoma treated with endoscopic resection. We also review the literature on the management of these rare tumors. To the best of our knowledge, this is the first case demonstrating resectability of a chondrosarcoma in this area with the endoscopic approach.

Conclusion: In appropriately selected patients, endoscopy is a valid surgical approach to a widespread, but well visualizable, low grade malignant tumor of the nasal and paranasal sinuses.