



**65th Annual Meeting, VICTORIA, BC
Scientific Program with Abstracts**

TUESDAY, MAY 24, 2011 - LECTURE THEATRE

PLENARY SESSION

CHAIR: TBA

08:00-08:15

CPD CORNER

Introduction – Dr. Sam Daniel, Montreal, QC

Update on Pediatric Sleep Disordered Breathing – L. Elden, Children's Hospital of Philadelphia, PA

08:15-08:30

Special Humanitarian Outreach Presentation: A Spectrum of Ear Disease in a Nigerian Hospital: Can Hearing Services Be Provided in this Setting – J. Smith, Portland, OR

08:30-08:45

Special Humanitarian Outreach Presentation: Ecuador – J. DiToppa, Edmonton, AB

08:45-09:00

The Oto-HNS Undergraduate Medical Education Working Group - An Update – K. Fung, London, ON

Learning Objectives

- To understand the importance of developing a standardized undergraduate medical education curriculum in our specialty.
- To be aware of current e-learning resources on the CSO-HNS website.
- To appreciate the value of educational research to assess the effectiveness of these e-learning resources.

Abstract

The Oto-HNS Undergraduate Medical Education Working Group was formed in 2009, and was granted official committee status by our Society in 2010. The mandate of our group has been (i) to develop standardized learning objectives in the context of a national OtoHNS UME curriculum, (ii) to create and share e-learning resources, and (iii) to promote and foster collaborative educational research. Since its inception, our group has been active and productive. This presentation will highlight our group's progress to date, including (i) the launch of the UME section of the CSO-HNS website, (ii) newly developed e-learning resources, (iii) ongoing research initiatives, and (iv) future directions.

09:00-10:30

WORKSHOP #15

Upper and Lower Facial Trauma For the Otolaryngologist - Head and Neck Surgeon – M. Brandt, Ypsilanti, MI, C. Moore, London, ON

Learning Objectives

Attendees will be refreshed on upper and lower face and neck anatomy as it relates to cervicofacial trauma.

Participants will understand the basic principles in managing the traumatized patient.

Participants will gain an appreciation for the relevant reconstructive issues when dealing with traumatic injuries of the upper and lower face and neck.

Attendees will recognize the importance of incision camouflage in facial trauma.

Participants will understand the basic concepts and techniques used in the management of upper and lower face and neck injuries.

Abstract

Objectives: Facial trauma is an anxiety provoking problem for many Otolaryngologist – Head and Neck Surgeons and Otolaryngology trainees.

Traumatic injuries of the face are managed by many specialists and thus not all Otolaryngology trainees gain substantial experience managing these problems during their residency. This workshop will focus on the step-by-step management of traumatic facial injuries of the upper and lower face.

Methods: A thorough discussion of the relevant anatomy of the craniofacial skeleton and soft tissues of the upper & lower face as they relate to facial trauma will be explored. The step-by-step management of low-velocity soft-tissue and bony injuries of the upper face including those of the frontal sinus, orbit, nose, and zygomatic bone as well as the lower face including those of the mandible and maxilla will be reviewed. Emerging technologies in the management of facial trauma including endoscopic repair of orbital fractures and mandibular condylar fractures will be reviewed.

Conclusion: Cervicofacial trauma is a common problem that can be incorporated into anyone's Otolaryngology – Head and Neck Surgery practice. This workshop provides attendees with the necessary foundation to approach most common traumatic injuries of the upper and lower face and neck.

10:30-11:00

COFFEE

PAPERS: General Otolaryngology

CHAIR: TBA

11:00-11:07

Endoscopic-Assisted Radiofrequency Lingual Tonsillectomy for Sleep Apnea – B. Rotenberg, S. Tan, London, ON

Learning Objectives

After the presentation, the audience will:

- 1) gain an appreciation for the anatomy of the lingual tonsillar region.
- 2) understand surgical correction of lingual tonsil hypertrophy, including historical and modern techniques.

Abstract

Objectives: To demonstrate the effectiveness of the endoscopic-assisted approach to radiofrequency lingual tonsillectomy.

Study Design: Case series

Methods: Prospective data were gathered on consecutive cases involving adult patients who underwent lingual tonsillectomy via endoscopic assisted approach and radiofrequency ablation.

Results: Formal results to be follow. The primary purpose of the talk is to demonstrate the novel surgical technique in a "How I Do It" fashion.

Conclusions: Endoscopic assisted radiofrequency lingual tonsillectomy is a safe and straightforward method for lingual tonsillar ablation, and solves many of the dilemmas found with more conventional but technically challenging techniques.

11:07-11:14 **Effect of Intranasal Corticosteroid (M.F.) Therapy on Snoring and Obstructive Sleep Apnea** – F. Lavigne, B. Petrof, P. Lavigne, A. Benedetti, Q. Hamid, Montreal, QC

Learning Objectives

Learn how inflammation can influence the pathophysiology of OSA
Learn how Intranasal corticosteroid modifies the clinical and laboratory parameters of OS.
Clarify the role of the upper airway in obstructive sleep apnea.

Abstract

Evidence is accumulating that OSA is associated with upper airway inflammation and that INCS could improve sleep quality. In this study we use objective measures of sleep quality and inflammation in addition of symptom score to identify the role of INCS in OSA.

Forty four patients received mometasone, 200 ug twice daily for a period of 12 weeks. Before and after this treatment, each patient underwent full polysomnography, maintenance of wakefulness testing (MWT), subjective sleepiness assessment (Epworth and Quebec Sleep questionnaires), and tissue biopsies from the inferior turbinate, nasopharynx and the uvula. The biopsies from the three sites were processed for EG2, CD4, CD8 T cells, CD68 and Elastase.

AR group patients showed significant improvements in the following sleep parameters: 1) supine AHI (55.85 vs 39.7/hr), 2) oxygen saturation nadir (86.42 vs 88.8%), and 3) sleepiness questionnaire scores. Significant reduction of eosinophils ($P < 0.0001$), and to lesser extent CD4 positive cells ($P < 0.05$) in the tissue obtained from inferior turbinate, nasopharynx and uvula of allergic individual.

The findings in this study confirmed the implication of inflammation in clinical symptoms of OSA and showed that controlling inflammation in the upper airways might be critical in improving clinical symptoms.

11:14-11:21 **Difference in Inflammatory Cells Infiltration in the Upper Airways of Obstructive Sleep Apnea Before and After Treatment with Intranasal Corticosteroid (M.F.)** – F. Lavigne, P. Lavigne, P. Basil, D. Normand, A. Beneditte, Q. Hamid, Montreal, QC

Learning Objectives

- Identify histologic manifestations of sleep breathing disorders.
- Differentiate between the inflammation in allergic and non-allergic patients in OSA.
- Associate the upper airway inflammation in OSA with the united airways theory.

Abstract

It has been suggested that the inflammation profile of the upper airway might influence the clinical manifestations of obstructive sleep apnea but up until now very few data are available. The objective of this study is to evaluate the inflammatory pattern in three anatomical sites within the same subjects before and after treatment with INCS (M.F.).

Patients with obstructive sleep apnea consented to be biopsied at the inferior turbinate, nasopharynx, and uvula before and after 12 weeks of INCS. The biopsies from the three sites of the 55 patients were processed for the detection of immunoreactivity of eosinophils, CD4 T, CD8 T lymphocytes, macrophages and neutrophils.

There was a significant correlation at baseline in the presence of EG2 in all three sites of the allergic subjects and it was significantly modified by M.F. ($P .0001$) inferior turbinates and nasopharynx showed the same inflammatory phenotype. M.F. reduced the overall inflammation in all three sites.

There are significant similarity in the distribution of inflammatory cells between the uvula, the inferior turbinate and nasopharynx that may eventually clarify the pathophysiologic role of the inflammation seen in the upper airway and influence the therapeutic options of OSA.

11:21-11:28 DISCUSSION

11:28-11:35 **Ergonomics in Otolaryngology: a Canadian Survey** – J. Bolduc, A. Tareck, A. Christopoulos, F. Prince Montreal, QC

Learning Objectives

1. After this presentation, ENT and H&N surgeons will be able to appreciate the occupational musculoskeletal problems for which they are at risk.
2. After this presentation, the audience will have a general overview of the occupational musculoskeletal problems affecting ENT and H&N surgeons.

Abstract

Occupational musculoskeletal problems (OMSP) and work ergonomics in otolaryngology - head and neck surgery has rarely been studied in the current literature.

Objectives: The main purpose of this study is to establish the global prevalence of OMSP among ENT and H&N surgeons in Canada. The second purpose is to establish ergonomic risk factors in the surgical and clinical practice of this population of surgeons.

Methods: A survey was conducted among all Canadian otolaryngologists using a self-administered questionnaire sent by email.

Results: 137 ENT and H&N surgeons responded. Half of them were unsatisfied with their work ergonomics. The results showed a global prevalence of musculoskeletal symptoms of 97%, with an intensity qualified as "from time to time". No association was made with risk factors for personal, occupational and ergonomics aspects surveyed. However, 43% of respondents identified a limitation in at least one aspect of their lives and 23% believe they will have to go on early retirement because of the OMSP.

Conclusion: ENT and H&N surgeons surveyed in Canada have a strong prevalence of musculoskeletal symptoms of low intensity. They are therefore at risk of developing MSP related to their work, both in surgical and clinical fields.

11:35-11:42

To Fast or Not to Fast: The Comparative Safety and Potential Benefits of a No-fast Protocol for Open Tracheotomy in the ICU – T. Hartl, D. Anderson, Vancouver, BC

Learning Objectives

1. All attendees will appreciate better the rationale behind a fasting policy as it applies to ICU patients, and the consequences of a traditional fasting protocol in this patient population, including length of stay in hospital, patient morbidity, and hospital costs.
2. All attendees will learn the comparative safety of a no-fast protocol in this specific surgical situation.
2. Staff will learn the potential benefits of a change in fasting policy as they have been realized in this institution, and will be armed with data to support a policy change in their own institutions.

Abstract

Objective: In 2007, VGH Intensivists adopted a no-fast protocol for patients undergoing tracheotomy, reasoning that a patient who has a secure, protected airway and a feeding tube, through which gastric contents may be suctioned prior to the procedure, has a uniquely low intra-operative aspiration risk. Further, they recognized that there were significant negative consequences of the traditional "NPO after midnight" policy that were unique to this patient population. The objective of this study is to provide evidence for the comparative safety of this policy.

Methods: Patients included all those in the VGH ICU who underwent elective, open tracheotomy by the Otolaryngology service for a period of 1 year after the policy change (160). Tracheotomies performed in the same institution in the year prior to the policy change were used as controls (158). Clinically significant events were defined as occurrence of objective aspiration of gastric contents during the tracheotomy procedure, combined with one or more signs of respiratory deterioration (new cough or wheeze, new pulmonary infiltrate on chest x-ray; a $\geq 10\%$ increased required oxygen flow-rate (FiO₂); or an alveolar-arterial oxygen tension ≥ 300 mmHg, all within the first 2 hours after the procedure.

Results: There were no clinically significant aspiration events identified in either cohort.

Conclusions: In this patient population, a no-fast protocol is a safe alternative to traditional fasting.

11:42-11:49

"Low Risk" Tracheotomy Care Pathway: Rationale, Development and Pilot Study – S. W. Matthews, J. Dort, C. Spence, M. Dube, M. Oster, M. Salesse, Calgary, AB

Learning Objectives

By the end of the presentation the audience will be able to:

1. describe the limitations and consequences of current tracheotomy management.
2. understand the elements of multidisciplinary clinical pathway development and implementation.
3. recognize the potential benefits a successful pathway can provide.

Abstract

Objectives: The primary objective is to standardize tracheotomy care on inpatient wards. Quality improvement and a reduction in the length of time until tracheotomy decannulation are hypothesized benefits to patients.

Methods: A retrospective chart review determined the baseline data regarding length of time from tracheotomy patient ward admission until

decannulation. A "low risk pathway" for patients discharged from the ICU with a tracheotomy was developed. A pilot study was implemented and prospectively analyzed.

Results: Review of 26 unselected tracheotomy patients revealed all were successfully decannulated with a mean time from ward admission to decanulation of 14.4 days (range 1-53 days). The tracheotomy "low risk pathway" was implemented. Thirty-six consecutive patients were evaluated and 21 met the criteria for entry into the pathway. Nineteen of these patients were decannulated. Two required reinsertion of a tracheotomy tube 1 and 4 days after decannulation. One of these was later re-enrolled in the pathway and was subsequently successfully decannulated. Several minor and major protocol violations were documented. The mean time to decannulation in the pathway patients who were successfully decannulated was 5.6 days (range 1 -13 days).

Conclusion: Application of a low risk tracheotomy pathway is feasible and can minimize the length of time to decannulation in selected patients.

11:49-11:56 **Deep Neck Space Infections: The Northern Alberta Experience** – B. Barber, H. Seikaly, P. Dziegielewski, V. Biron, Edmonton, AB

Learning Objectives

At the conclusion of this session, the participant should be able to:

1. To recognize common risk factors for DNSIs.
2. To recognize predictors of complications in DNSI.
3. To appreciate common microbiology for DNSIs in patients of Northern Alberta.
4. To form an algorithm for basic DNSI treatment.

Abstract

Background: Deep neck space infection (DNSI) is a life-threatening condition that often requires surgical and medical management.

Objective: To determine the yearly and total incidence of DNSI in Northern Alberta. To identify risk factors for developing DNSI in Northern Alberta.

Design: Prospective cohort study and retrospective review.

Methods: A prospective risk factor questionnaire was administered to patients admitted to hospital with DNSI. Other data collected included: treatment, complications, length of hospital stay, and microbiology. A chart review was conducted to assess the incidence of DNSI in Northern Alberta from 1999-2009.

Results: 23 consecutive patients were enrolled in the prospective arm. 21 required urgent securing of the airway with surgical drainage of a neck abscess. Multivariate regression analysis identified that smoking, infrequent dental visits, low socioeconomic status, and living in a town on < 1000 people were significant risk factors for developing a DNSI and complications thereof ($p < 0.05$). Mean hospital stay was 9.8 days and the most common pathogen identified was *S. viridans* (91%). The retrospective review found an incidence of 34.1 DNSI/year.

Conclusion: The incidence of DNSI in Northern Alberta appears to be higher than in other regions in Canada. The increased risk is related to population characteristics.

11:56-12:03 DISCUSSION

12:03-12:10 **Sterile Water or Tap Water for Nasal Saline Irrigations: A Pilot Study** - L. Sowerby, London, ON, E. Wright, Edmonton, AB

Learning Objectives

At the conclusion of this presentation participants will:

1. Have an appreciation for patient compliance with standardized instructions for the preparation of nasal saline irrigation solutions.
2. Have a refined understanding for the reasons behind poor compliance with these instructions.

Abstract

Objectives: Nasal saline irrigations are a valuable, widely used adjunct for the management of chronic rhinosinusitis. Due to potential concerns regarding bacterial super-infection patients are routinely recommended to use distilled, bottled, or boiled tap water when making up these solutions. Anecdotally, patients frequently inform Otolaryngologists that they have begun using tap water irrigation preparation. We therefore undertook this study to assess patient adherence to preparation guidelines.

Methods: Cross-sectional, anonymous survey of 100 consecutive patients using nasal saline irrigations on the advice of the authors. Patients received their instructions in our standardized manner including printed handouts.

Results: Patients almost uniformly reported improvement in their symptoms with the use of saline irrigations. No single water preparation was used by a majority of patients. However, tap water (38%) and boiled tap water (33%) represented the largest groups. The most common reason cited for

using tap water was convenience. Patients using bottled, distilled, or boiled tap water were almost evenly split between describing the process as “moderately” inconvenient versus “not at all” inconvenient. A large majority (70%) of patients report cleaning their irrigation bottles weekly or monthly.

Conclusions: Despite standardized instructions for preparation of saline irrigation solutions many patients use straight tap water when preparing them.

12:10-12:17 **Turbinectomy: Fact and Fiction** – E. Akbari, R. Younger, E. Chang, A. Sharma, Vancouver, BC

Learning Objectives

- 1) The otolaryngology residents will be able to describe various techniques of surgical reduction and resection of turbinates.
- 2) The otolaryngologists will learn about the advantages, disadvantages, complications and controversies surrounding surgical managements of the turbinates in nasal airway obstruction.
- 3) The otolaryngologists will be able to select patients who will be most likely to benefit from turbinectomy in management of their nasal airway obstruction.

Abstract

Introduction: Turbinectomy remains a controversial adjunct to nasal airway surgery.

Objective: To examine the efficacy of turbinectomy in management of nasal airway obstruction and to discuss the historical and technical aspects of turbinectomy.

Methods: We performed a literature review of role of turbinectomy in nasal airway obstruction management and carried out a retrospective chart review of 2800 turbinate volume reduction procedures performed by the senior author from 1984 to 2010.

Results: Advantages, disadvantages, complications, and controversies surrounding the surgical management of the turbinates are discussed. Indications for surgery, technical pearls indicative of procedure selection, and outcomes will be discussed to clarify which patients can truly benefit from turbinectomy.

Conclusion: This review demonstrates turbinectomy can be an effective treatment of nasal airway obstruction in select patients. When analyzing different methods, emphasis on efficacy, function preservation, and avoidance of complications is paramount.

12:17-12:24 **Nasal Septal Perforation Repair Using Medpor® (Polyethylene) Implants** – J. Cho, P. Marck, R. Taylor, Calgary, AB

Learning Objectives

1. By the end of this session, the learner will be able to describe the various etiologies and presenting symptoms of patients with nasal septal perforations in the clinical setting.
2. By the end of this session, the learner will be able to describe how to repair septal perforations using Medpor® (Polyethylene) sheet implants in the operating room.
3. By the end of this session, the learner will be able to compare the outcomes use of Medpor® implants to other techniques described in literature.

Abstract

Objectives: Numerous techniques have been described to repair nasal septal perforations. However, many are technically challenging with varying degrees of success. This study aims to evaluate the use of Medpor® (polyethylene) implants in the repair of nasal septal perforations.

Study Design: Prospective cohort study

Methods: Sixteen patients with a nasal septal perforation were identified between January 2008 and May 2010. Each of these patients underwent repair of their nasal septal perforation with a Medpor® (polyethylene) orbital sheet implant. After measuring the size of each perforation, the implant was trimmed and customized to fit appropriately. The implant was then fitted in between bilateral mucoperichondrial flaps using an intranasal approach. These patients were followed for a minimum of 6 months.

Main Outcome Measure: Successful closure of the nasal septal perforation

Results: The most common presenting symptoms were nasal obstruction, crusting, and epistaxis. Perforations ranged from 1.0 – 3.0 cm in diameter. Fifteen of 16 patients who underwent repair of their nasal septal perforations with a Medpor® (polyethylene) implant had successful closure (94%). Extrusion occurred in one patient. Remucosalization required an average of 6 weeks.

Conclusion: The use of Medpor® (polyethylene) implants is effective, technically easy, cost effective, and exhibits relatively low patient morbidity as it does not require the harvesting of any tissue from other donor sites.

Tuesday, May 24, 2011 – LECTURE THEATRE continued...

12:24-12:30 DISCUSSION

12:30-13:30 LUNCH

13:00-13:30 MINI-WORKSHOP #1

What Everyone Should Know on the Maintenance of Certification Program, Continuing Professional Development, and Life-Long Learning – S. Daniel, S. Schneeweiss, Montreal, QC

Learning Objectives

By the end of this workshop, the participants will understand the new Maintenance of Certification Program and will master techniques to help them in planning and managing their continuing professional development.

Abstract

Continuing professional development is vital to any otolaryngologist and supports a wide range of areas including clinical education, practice management, ethical decision-making, evidence-based care and managed care principles. Unlike traditional learning, professional development facilitates a variety of learning formats, such as small groups and self-directed learning, and focuses on outcomes related to practice. The Royal College of Physicians and Surgeons of Canada's Maintenance of Certification (MOC) program is about to undergo major changes based on feedback from fellows, the MOC program evaluation survey and a number of committees, and societies. The framework of CPD options has been reorganized around three sections based on how Fellows view their learning: learning as a member of a group; learning as an individual or assessing an aspect of practice to identify unperceived needs. These changes will be presented along with concrete examples to help otolaryngologists claim their credits appropriately and assist them in planning and managing their continuing professional development.

PAPERS: Head and Neck Surgery 2

CHAIR: TBA

13:30-13:37 **Development of a Transoral Robotic Surgery Program at the University of Western Ontario** – A. Nichols, J. Yoo, K. Fung, J. Franklin, C. Szeto, C. Chapeskie, J. Basmaji, London, ON

Learning Objectives

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

1. The potential benefits of transoral robotic surgery (TORS) for select head and neck cancers.
2. The institutional, technical and financial barriers to development of a TORS program.
3. The need for careful, prospective evaluation of this technology for the treatment of head and neck cancer.

Abstract

Background: Over the past five years transoral robotic surgery (TORS) has become an increasingly popular form of treatment for oropharyngeal and laryngeal squamous cell carcinoma (SCC) in the United States. The visualization and instrumentation offered by this system eliminates many of the challenges of standard endoscopic surgery. TORS allows minimally invasive resection of lesions that would otherwise only be removable by open surgery. The structure of the Canadian healthcare system and its resource limitations create several unique challenges for developing a TORS program.

Objectives: To outline the challenges of establishing a TORS program at a Canadian tertiary care centre.

Methods: We will review the steps involved in developing robotic head and neck surgery program at the University of Western Ontario. Our series of pilot cases will be reported.

Results: Issues that will be outlined include institutional approval and multi-disciplinary team approval, establishing treatment protocols, surgeon training, funding issues, operating room time / equipment, and establishing rigorous outcome measures. Our series of pilot cases will be reported.

Conclusions: Despite several unique challenges, establishing a TORS program in Canada is feasible. This new technology can potentially be of great benefit to select patients, however this will require further evaluation in the context of prospective studies.

13:37-13:44 **Management of Unknown Primary Squamous Cancer of the Neck** – I. Pathak, H. Kader, S. Larrsen, Victoria, BC

Learning Objectives

1. By the end of this presentation the participant will be able to identify appropriate investigations for squamous cancer of the neck unknown primary.
2. By the end of the presentation the participant will be able to outline the options for treatment of squamous cancer of the neck unknown primary.
3. By the end of the presentation the participant will be able to outline survival rates and rates of primary emergence after treatment of squamous cancer of the neck, unknown primary.

Abstract

Objective: To determine the outcome of patients treated for squamous cancer of the neck unknown primary and their rate of primary cancer emergence.

Methods: A retrospective review of patients with squamous cancer of the neck unknown primary treated at the British Columbia Cancer Agency from 1995-2005 was undertaken. Approval for the study was obtained from the Research Ethics Board of the University of British Columbia. Data regarding investigation of patients with imaging, endoscopy and biopsy was obtained. Survival data analyzed using the Kaplan Meier method. Rates of primary emergence were compared between comprehensive radiotherapy and surgery. Statistical analysis was undertaken using SSPS.

Results: Two hundred and one patients with unknown primary squamous cancer of the neck were treated between 1995-2005. CT scanning was carried out in 94% of patients, and 84% had a panendoscopy. Eighty percent of patients received primary radiotherapy and 20% received primary surgery. Five year survival was 76.4% for patients receiving radiotherapy and 71.4 % for patients receiving primary surgery. The rate of primary emergence for patients treated with radiotherapy was 11% and for those treated with primary surgery was 9.7%. Neither difference was statistically significant.

Conclusion: Treatment of squamous cancer of the neck, unknown primary with radiotherapy or surgery results in similar outcomes both for survival and primary emergence.

13:44-13:51 **Neck Metastases in Oropharyngeal Cancer: When and to What Extent is Bilateral Treatment Indicated? – P.**
Dziegielewski, H. Seikaly, D. O'Connell, B. Barber, J. Harris, Edmonton, AB

Learning Objectives

1. To highlight the controversy in the extent of neck treatment in OPSCC
2. To demonstrate the extent of sub-clinical neck metastases in OPSCC
3. To identify which groups of OPSCC patients would likely benefit from bilateral neck treatment
4. To provide statistical reasoning for revising neck treatment guidelines in OPSCC

Abstract

Background: Oropharyngeal squamous cell carcinoma (OPSCC) has a high propensity for neck metastases. The majority of these patients will require neck treatment; however, the extent and role of bilateral treatment is controversial.

Objective: To determine the rate and levels of bilateral neck metastases in OPSCC and to identify factors predictive of contralateral spread of disease.

Methods: Records of 227 consecutive OPSCC patients from 1998-2008 treated with primary resection and bilateral neck dissections were reviewed. Patient, tumor and pathologic data was collected.

Main Outcome Measure: Presence of bilateral or contralateral positive neck nodes on final histological analysis.

Results: 179(75%) patients had ipsilateral had 55(23%) bilateral neck metastases. N0 necks demonstrated a 5% rate of bilateral nodal involvement. N1+ necks, were found to have positive contralateral disease in 20% of cases. Levels with more than 10% involvement in N0 necks included: I-III(ipsilateral) and II-III(contralateral) and for N1+: I-V(ipsilateral) and I-IV(contralateral). Multivariate logistic regression analysis identified T4 tumors or N2b+ necks as being more likely to exhibit bilateral neck disease on final pathology ($p < 0.05$).

Conclusions: The incidence of bilateral neck disease in OPSCC is higher than once thought. Patients with OPSCC T4 or N2b+ should receive bilateral neck treatment.

13:51-13:58 DISCUSSION

13:58-14:05 **Laser Resection of Laryngeal Cancer: A Prospective Outlook on Quality of Life and Recurrence Rates – A. Fanous, M. Hier, H. Alhakami, Montreal, QC**

Learning Objectives

By the end of this session, the students, residents and otolaryngologists will be able to appreciate the quality of life and recurrence rates of patients operated with laser surgery for laryngeal cancer when encountered during their training or practice.

Abstract

Objective: To analyze the outcome of patients with laryngeal cancer operated with laser in terms of both their quality of life and their recurrence rates.

Methods: We performed a prospective study on 31 patients operated between 2004 and 2010. The patients included in this study were diagnosed with glottic or supraglottic carcinoma. Tumour staging ranged from Tis to T3. The patients suffered mostly from squamous cell carcinoma. All charts

were reviewed and patients were called to complete two quality of life surveys via telephone including the voice handicap index (VHI-30) and the voice related quality of life (VRQOL).

Results: The mean follow-up time was 31 months. The mean score for the VHI index was 83.4%, compared to 83.7% for the VRQOL survey, with 76.36% for the functional component and 91.14% for the social component. This difference was found to be statistically significant with $p < 0.003$. We performed a Kaplan-Meier Survival Analysis and found that the 24 month disease free survival was 95%. The laryngeal preservation rate was 96% and the ultimate control rate with laser alone 86%.

Conclusion: Our study demonstrates an excellent quality of life combined with low recurrence rates for patients treated with laser resection of laryngeal cancer.

14:05-14:12 **Voice Outcomes After Transoral Laser Microsurgery for Early Glottic Cancer – a Multicenter Canadian Review – C.**
Myers, M. Rigby, H. Osborn, Winnipeg, MB, M. Taylor, Halifax, NS, K. Fung, London, ON, P. Kerr, Winnipeg, MB

Learning Objectives

At the end of this session the participant will

- understand the usefulness of the voice handicap index (VHI-10) as a measure of voice quality
- understand the impact of treatment of early glottic cancer on voice quality as measured by VHI

Abstract

Objective: To compare the voice outcomes of early glottic cancer treated with transoral laser microsurgery (TLM) (i) between stages (ii) with and without anterior commissure resection and (iii) with a matched cohort of patients treated with radiotherapy (RT).

Study Design: Multicenter, retrospective, non-randomized consecutive series of carcinoma in situ, and stage 1&2 glottic carcinoma treated with TLM or RT.

Setting: Three Canadian academic cancer centers.

Methods and Main Outcome Measures: The primary outcome measure of our study was the Voice Handicap Index (VHI-10). The VHI-10 questionnaire was administered to patients who were 1-3 years post treatment. The VHI-10 scores were compared between: stages of early glottic carcinoma; those who did and did not have the anterior commissure resected; and those treated with TLM and RT. Secondary outcome measures were overall survival, laryngectomy free survival, and laryngeal preservation rate.

Results: There is a trend toward worse VHI-10 scores in patients who undergo TLM with anterior commissure resection vs. TLM without anterior commissure resection and with TLM vs. RT. However, the overall level of disability is mild for TLM. Laryngectomy free survival and laryngeal preservation rates are high for both TLM and RT.

Conclusions: The advantages of TLM in most patients outweigh the voice handicap that results from surgery.

14:12-14:19 **Incidence of Human Papillomavirus-Related Oropharyngeal Squamous Cell Carcinoma in South-western Ontario – S.**
Dhaliwal, J. Basmaji, C. Chapeskie, J. Franklin, J. Yoo, K. Fung, J. Mymryk, London, ON

Learning Objectives

After viewing the presentation, the learner will be able to:

- understand the importance of Human Papilloma Virus (HPV) infection in the etiology of oropharyngeal squamous cell carcinoma; and
- appreciate the laboratory components involved in detecting for the presence of HPV infection in tumor biopsy specimens.

Abstract

Objective: To investigate the rates of HPV-related oropharyngeal squamous cell carcinoma (OPSCC) in Southwestern Ontario.

Subjects & Methods: A retrospective chart review identified 40 patients with OPSCC treated at the London Regional Cancer Center (LRCC) at Victoria Hospital in London, Ontario from 2002 to 2010. Pre-treatment cancer biopsies were obtained and the presence of HPV type 16 and 18 infection was tested using in-situ hybridization. Additionally, p16 expression (a tightly correlated marker for HPV presence) was assessed using immunohistochemistry.

Results: HPV infection was detected in a large fraction of cases of OPSCC. p16 overexpression is highly correlated with HPV infection.

Conclusion: HPV infection is frequent etiologic agent in OPSCC in South Western Ontario. This has significant implications for screening, patient counselling and treatment choices.

14:19-14:26 DISCUSSION

14:26-14:33 **Incidence and Age at Diagnosis of HPV-Related Head and Neck Cancers** - S. Johnson, M. Corsten, R. Rourke, J. McDonald, Ottawa, ON

Learning Objectives

At the end of this presentation the audience will:

- 1) be able to describe the epidemiology of Head and Neck Cancers;
- 2) understand the changing trends in the epidemiology of Canadians with certain Head and Neck Cancers due to Human Papillomavirus;
- 3) have a basic understanding of how these changing epidemiologic trends may have an impact on treatment and prognosis for these cancers.

Abstract

Objectives: The objective of this study was to investigate the impact of Human Papillomavirus (HPV) on the epidemiology of Head and Neck Cancers (HNCs) in Canada:

- 1) Has the incidence of HPV-related and non-HPV related HNCs changed?
- 2) Has the age at diagnosis of patients for these cancers changed?

Methods: We used Canadian Cancer Registry Data (1992-2008) and categorized HNCs into three groups (High (HHPV), i.e., oropharynx; Moderate (MHPV), i.e., oral cavity; Low (LHPV), i.e., larynx); based on the probability that HPV causes the cancer. We calculated age-adjusted incidence and median age at diagnosis for each category.

Results: HHPV tumors increased in incidence over the study time-period at an average annual rate of 1.02% (p: 0.010, CI: 0.00, 0.02), compared with decreases in MHPV of 2.38% (p: 0.000, CI: -0.03,-0.02) and in LHPV of 3.67% (p: 0.000, CI: -0.04,-0.03).

The median age at diagnosis for HHPV-related HNCs decreased by an average of 0.23 years per calendar year (p: 0.000, CI: -0.30,-0.16) compared with no change for MHPV and an increase for LHPV of 0.10 years per calendar year (p: 0.008, CI: 0.03, 0.17).

Conclusion: The proportion of HPV-related HNCs in Canada is increasing, along with a decreasing age at diagnosis.

14:33-14:40 **Role of Platelet Rich Plasma on Wound Healing in Radial Forearm Free Tissue Transfer** –D. Angel, K. Fung, D. Micomonaco, J. Franklin, A. Nichol, J. Yoo, P. Doyle, London, ON

Learning Objectives

By the end of this presentation, the audience will:

- 1) Understand the impact that both donor and recipient site morbidity has on quality of life in patients undergoing major ablative and reconstructive head and neck cancer surgery.
- 2) Understand the role and current use of Autologous Platelet Adhesives and Platelet Rich Plasma in wound healing.
- 3) Have an understanding of several validated scar scales and indexes that can be used for the evaluation of scars.

Abstract

Objective: To evaluate the effect of Platelet Rich Plasma (PRP) on forearm wound healing in patients undergoing radial forearm free flap (RFFF) reconstruction for head and neck cancers defects.

Design: Prospective, blinded, randomized control trial.

Methods: Patients undergoing RFFF were randomly assigned to one of two groups, determined by a sealed envelope opened intraoperatively. Group A received PRP on the surgical bed of the RFFF donor site, while Group B received saline. The forearm donor site was then assessed post-operatively at 1 week, 3 month, 6 month and 1 year follow-up visits using validated scar evaluation tools.

Results: 11 patients received PRP to their forearm. 15 patients received saline to their forearm. The mean score (using the VSS; scale of 0 – 13, a lower score indicating a better scar) for patients who received PRP was 6.4, 6.72, 4.72 and 3.64 at 7 weeks, 3, 6 and 12 months, respectively. The mean score for patients who received saline was 6.57, 7.33, 5.53 and 4.2, at 7 weeks, 3, 6, and 12 months, respectively. The difference in mean scores between groups were not statistically significant.

Conclusion: PRP may not improve the aesthetic appearance of RFFF donor sites. However, future studies on the effects of PRP on other aspects of wound healing, as well as studies using more refined outcome measures are necessary to fully define the effect of PRP on the healing of area scars.

14:40-14:47 **Outcomes of Gastric Pull-up Reconstruction Following Resection of Hypopharyngeal and Cervical Esophageal Carcinoma** – R. Rahmanian, D. Anderson, D. MacNeil, R. Finley, H. Ling, J. Yee, Vancouver, BC

Learning Objectives

1. To evaluate the surgical complication rate, mortality rate, and functional outcomes of patients treated with gastric pull-up reconstruction by the senior author (DWA) at Vancouver General Hospital and St. Paul's Hospital.
2. To compare the various reconstructive options available following a laryngo-pharyngo-esophagectomy.
3. To assess whether the gastric pull-up procedure is a suitable method of reconstruction following a laryngo-pharyngo-esophagectomy.
4. To compare our post-operative complication and mortality rates to that previously reported in the literature.

Abstract

Objectives: To evaluate the surgical complication rate, mortality rate, and functional outcomes of patients treated with a gastric pull-up reconstruction following a laryngo-pharyngo-esophagectomy.

Methods: A retrospective review of all laryngo-pharyngo-esophagectomies and gastric pull-up reconstruction performed by one head and neck surgeon (DWA) and one of three thoracic surgeons at Vancouver General Hospital and St. Paul's Hospital from 1988 - 2009.

Results: Twenty-four gastric pull-up reconstructions were performed. Twenty-two patients had laryngo-pharyngo-esophagectomies, and the remaining two patients had pharyngo-esophagectomies with previous laryngectomies. Nineteen (79%) patients had pre-operative radiotherapy and required salvage surgery. Four patients (17%) had an anastomotic leak and dehiscence, and four (17%) developed pharyngocutaneous fistulas. Two (8%) post-operative mortalities occurred secondary to sepsis. On average, patients began oral diet on post-operative day 12, and were discharged home on post-operative day 17.

Conclusions: Our overall early post-operative complication rate was lower than that previously reported, and our mortality rate compared favorably to the literature. We found the gastric pull-up to be a safe and effective reconstructive option post-laryngo-pharyngo-esophagectomy, providing immediate restoration of the alimentary continuity, while offering patients acceptable morbidity and mortality rates and shorter hospital stays.

14:47-14:54 DISCUSSION

14:54-15:01 **Expanded Use of External Fixation for Reconstruction of Segmental Mandibular Tumors with Outer Cortical Involvement** – Y. Jaquet, D. Enepekides, K. Higgins, Toronto, ON

Learning Objectives

- To review the technique of external fixation of the mandible and its indications.
- To understand the role of external fixation in complex cases of mandibular reconstruction.
- To introduce an expanded technique of external fixation when application of pre-registered reconstruction plates is not possible.

Abstract

Introduction: Fixation of osseocutaneous free flaps in the setting of transcortical mandibular erosion can be inaccurate and result in suboptimal mandibular contour. We present a modification of standard intraoperative external fixation for mandibular reconstruction when pre-registration of the reconstruction plate is not possible due to transmandibular tumor extension.

Methods: We will review the indications, rationale, and technique for a modified use of the external fixation device. This modification permits rapid and accurate contouring of mandibular reconstruction plates when pre-registration is not possible due to tumor extent. A step-by-step description of the technique using models and intraoperative photos will be presented. In brief, once standard external fixation has been carried out and prior to segmental mandibulectomy, additional pins are fixed to the connecting rod and delineate the mandibular contour in three-dimensional space. Following mandibulectomy, these pins allow accurate contouring of the reconstruction plate and improved restoration of premorbid anatomy.

Conclusion: This method of mandibular reconstruction is a simple and time-effective alternative to intraoperative computer navigation and 3D modeling in select cases of oral carcinoma requiring segmental mandibulectomy.

15:01-15:08 **Transmandibular Resection and Free-Flap Reconstruction of Tonsillar Cancer: Surgical and Functional Outcomes** – J. Vas, H. Seikaly, P. Dziegielewski, D. O'Connell, Y. Alrajhi, A. Ma, J. Harris, Edmonton, AB

Learning Objectives

By the end of this session, the program audience will be able to:

- 1) Describe the advantages and disadvantages of trans-oral and trans-mandibular approaches to the tonsillar fossa.
- 2) Describe the options of tonsillar fossa reconstruction and their risks and benefits.
- 3) Describe the survival, functional and quality of life outcomes following trans-mandibular resection and free-flap reconstruction of TSCC.
- 4) To critically appraise the surgical options for TSCC treatment.

Abstract

Background: In the age of minimal invasive procedures, surgery of tonsillar squamous cell carcinoma (TSCC) often ends with transoral radical-tonsillectomy. Many surgeons are abandoning open approaches and reconstruction to favor closer margins and unknown functional outcomes. However, the optimal modality remains to be elucidated.

Objective: To evaluate survival, surgical and functional outcomes of patients with TSCC treated with primary transmandibular tumor resection and free-flap reconstruction.

Methods: A retrospective review of all TSCC patients treated with primary transmandibular resection and free-flap reconstruction from 1998-2009 at the University of Alberta was conducted. Outcomes included survival, operative complications, swallowing function, speech function & quality of life.

Results: 115 patients were identified. Resection margins were negative and at least 5mm in all specimens. Disease-free survival at 3 and 5 years was 75% and 65% respectively. 10% of patients experienced surgical complications and 1.7% had flap compromise. One year post-operatively, 0% required PEG feeding. Moreover, there was no significant change in swallowing transit-time, speech intelligibility or quality of life scores from the pre-operative state ($p < 0.05$).

Conclusions: Transmandibular resection and free-flap reconstruction for TSCC is associated with a low complication rate, acceptable survival and provides good functional and quality of life outcomes.

15:08-15:15 **Microvascular Reconstruction in Scalp and Lateral Temporal Bone Defects** – D. O'Connell, N. Futran, H. Seikaly, J. Harris, M. Teng, E. Mendez, Edmonton, AB

Learning Objectives

By the end of this session, Head and Neck Surgeons, General and Specialized Otolaryngologists, Residents and Allied Health Professionals will gain a better understanding of treatment options available when counselling patients suffering from scalp and temporal bone malignancies and defects. By the end of this session Head and Neck Surgeons, Fellows and other practitioners directly involved in the treatment of scalp and temporal bone malignancies will have an improved understanding of the surgical techniques, possible complications (including rates of major and minor complications in a large case series) that can arise when caring for patients with these types of disorders.

Abstract

Objectives: Defects of the scalp and lateral temporal bone (LTB) represent a unique challenge to the reconstructive surgeon. Skin grafts, locoregional flaps, or tissue expanders are often not feasible due to a myriad of reasons. Microvascular free tissue transfer (MFTT) coverage offers distinct advantages in managing these defects.

Materials & Methods: A retrospective case series was performed on all patients presenting to a tertiary care facility who had scalp or LTB defects reconstructed with free tissue transfer from May 1996 - July 2009. Defect characteristics, flap type, vessel selection, radiation status, dural exposure, complications, and outcomes were analyzed.

Results: 68 free flaps were performed in 65 patients with scalp or LTB defects. 22 resections included craniotomy, 48 patients had pre- or postoperative radiation. Defects ranged from 6-836 cm². All flaps (46 latissimus, 11 rectus, 4 radial forearm, 6 anterolateral thigh, and 1 omental) were transferred successfully. Cosmetic results were consistent and durable.

Conclusion: MFTT is a safe, reliable method of reconstructing scalp and LTB defects while offering favorable cosmetic results. We favor the use of latissimus muscle-only flap with skin graft coverage for large scalp defects and rectus or anterolateral thigh free flaps for lateral temporal bone defects.

15:15-15:22 DISCUSSION

15:22-15:30 **Prospective Functional Outcomes After Treatment of Advance Oropharyngeal Carcinoma with Radiation or Chemoradiation** – C. Myers, P. Kerr, F. Bemmeke, A. Cooke, J. Butler, P. Lambert, Winnipeg, MB

Learning Objectives

At the end of this session the participant will understand the expected functional and oncologic outcomes after treatment of advanced oropharyngeal carcinoma with radiation and chemoradiation.

Abstract

Objective: To document functional outcomes after radiation or chemoradiation in patients with stage III and IV oropharyngeal carcinoma.

Design: Prospective, population-based consecutive series.

Methods: Functional results were prospectively collected in a cohort of 86 patients with stage III/IV oropharyngeal carcinoma diagnosed between 2003 and 2008 all of whom were treated by chemoradiation or radical radiation with curative intent. Functional assessments were performed prior to treatment and at 3, 6, 12, 24 and 36 months post-treatment.

Results: Sixty patients underwent concomitant chemoradiation and 26 had radiation alone. Assessment of overall performance status revealed that Karnofsky scores exceeded 70 in 75% of patients at 3 months, and in 95% at 2 years post treatment. Over 95% of patients had ECOG performance ratings of 0 or 1 at 2 years. Tube feed dependency rates improved from over 40% at 3 months to less than 5% at 2 years post treatment. Over 80% of patients were comfortable eating in public and could handle a soft diet at 2 years post treatment. All patients felt their speech was understandable in most settings within one year of treatment.

Conclusions: The majority of patients will have a good functional outcome after radiation or chemoradiation for advanced oropharyngeal carcinoma. We now have a functional benchmark to which we can compare

15:30-16:00 DISCUSSION

Tuesday, May 24, 2011 – LECTURE THEATRE continued...

16:00-17:00 **ANNUAL BUSINESS MEETING**

17:00-18:00 WORKSHOP #20
Controversies in Management of Differentiated Thyroid Cancer – A. Pathak, Winnipeg, MB

Learning Objectives

At the end of the session the attendees will be able to evaluate advances in management of differentiated thyroid cancer such as newer technology as well as consider the available evidence on contentious issues in management of differentiated thyroid cancer and apply them into clinical situation.

Abstract

Objectives: At the end of the session the attendees will be able to evaluate advances in management of differentiated thyroid cancer such as newer technology as well as consider the available evidence on contentious issues in management of differentiated thyroid cancer and apply them into clinical situation.

Methods: The workshop will include presentations eminent speakers in the field on contentious issues in management of differentiated thyroid cancer –

1. Identification of recurrent laryngeal nerve in thyroidectomy: do we need intra-operative recurrent laryngeal nerve monitoring.
2. Role of central compartment lymph node dissection in differentiated thyroid cancer
3. Adjuvant radioactive iodine: when and how much?
4. Follow up of thyroid cancer: thyroglobulin, imaging and beyond

25% for the time at the end of the session there will be reserved for panel discussion to enable two way interactions with the audience. We will present a set of case summaries to assess audience understanding of the topic.

Results: This workshop will present the available evidence on these contentious issues in the management of thyroid. We will evaluate the place of emerging technology in treatment of thyroid cancer. All presentations will conclude into evidence based recommendations.

Conclusions: This workshop will be of relevance to residents, fellows and practicing physicians alike.

**TUESDAY, MAY 24, 2011
SAANICH ROOM, VCC**

08:00-09:00 **PLENARY SESSION** (*Lecture Theatre*)

09:00-10:30 WORKSHOP #16
Mastoid Obliteration with Bone Pate – J. Roberson, Palo Alto, CA

10:30-11:00 **COFFEE**

11:00-12:30 WORKSHOP #17
Pitfalls in Stapedotomy Surgery – M. Bance, Halifax, NS, B. Westerberg, Vancouver, BC, R. Liu, Edmonton, AB, D. Eytan, Vancouver, BC, D. Schramm, Ottawa, ON, J. Rappaport, Montreal, QC

Learning Objectives

By the end of this workshop, the practicing surgeon who performs stapedotomies will be able to better appreciate potential surgical complications, and potential ways to avert or deal with these while performing stapedotomy surgeon.

Abstract

Objectives: To present various surgical scenarios that practicing surgeons may encounter when performing stapedotomy surgery

Methods: Video presentations of intraoperative or case presentations of complicated cases that resulted in a complication or difficult operative decision will be presented. This will be followed by a discussion about how this has changed practice patterns and intraoperative practices by the surgeons involved.

12:30-13:30 **LUNCH**

13:00-13:30 **MINI-WORKSHOP #2**
US Fellowships - Options, Immigration & Application Demystified – M. Brandt, N. Raza, Ypsilanti, MI

Learning Objectives

Participants will gain an appreciation for the many US fellowship opportunities available and the rationale for pursuing fellowship training.

Participants will be able to list the pros and cons of US fellowship training in each of the represented subspecialty areas of OTO-HNS. Participants will become more familiar with the requirements for US licensure including the USMLE. Participants will better understand the process of US fellowship application and the possible challenges they may face. At the completion of this session participants will be better able to evaluate their candidacy for US fellowship application.

Abstract

Objectives: Residents considering fellowship training in the United States face several unique challenges. These stem from difficulties in determining which fellowship is right for them, challenges in fellowship application, and most troublesome - navigation of the US immigration system. The goal of this workshop is to better familiarize the participant with US fellowship programs and clarify the uncertainties of fellowship application.

Methods: A broad panel of current US fellows will present their own individual experiences in successfully obtaining and pursuing US fellowship training. Subspecialty areas of Otolaryngology represented will include: Paediatric Otolaryngology, Head and Neck Oncology & Microvascular Reconstructive Surgery, Rhinosinusology, and Facial Plastic & Reconstructive Surgery. Items to be reviewed include: the USMLE and US licensure, US immigration and visa options, US health care system overview and the influence this has on fellowship training, fellowship options and why each panelist chose their area of interest, challenges faced by each panelist and how they were overcome, and finally a question/answer period with current US fellows.

Conclusion: The US offers a vast array of fellowship opportunities across the broad subspecialty areas of OTO-HNS. This workshop will endeavor to better familiarize current postgraduate trainees with US fellowship options and assist in demystifying the challenges associated with pursuing US fellowship training.

PAPERS: Otology 2

CHAIR: TBA

13:30-13:37

Directional Hearing, Single Sided Deafness & BAHA - Does it Exist? Can it be Assessed Simply? Can it Be Learned? –

J. Savage, D. Morris, M. Gulliver, Halifax, NS

Learning Objectives

At the end of the session, the audience will be able:

1. To appreciate that some BAHA patients with single sided deafness (SSD) do admit to be able to localize sound. with BAHA
2. To recall and perform a simple clinical tool to assess this ability.
3. To appreciate the possible role of home exercises in improving directional hearing performance in this group.

Abstract

- Objectives:**
1. Is directional hearing possible in patients with single sided deafness rehabilitated with BAHA?
 2. Can we clinically distinguish this group from those unable to localize sound?
 3. Can we improve the ability of those patients with poor directional hearing to localize sound?

Methods: A telephone survey of 30 SSD patients successfully rehabilitated with BAHA was conducted to determine whether they perceived directional hearing.

We then designed a clinical assessment tool to assess sound localization in these patients. 2 groups were tested; those already fitted with BAHA and those at initial fitting.

All patients were given a 2-week period of exercises before returning to the test centre for reassessment.

Results: Out of 30 patients contacted by telephone, 45% claimed to have a degree of directional hearing. In our preliminary results from the main study, these patients seem to have superior performance on assessment. Home exercises also appear to have a positive subjective and objective outcome.

Conclusions: Our assessment tool appears to be able to distinguish between patients with SSD fitted with BAHA who claim directional hearing and those who don't. Home exercises may have a positive impact on improved performance with sound localization. More numbers are sought.

13:37-13:44

Tympanic Membrane Manipulation for Symptomatic Relief of Patulous Eustachian Tube –

M. Brace, M. Bance, D. Kirkpatrick, Halifax, NS

Learning Objectives

By the end of this presentation, otolaryngologists will be able to:

1. value the role of cartilage tympanoplasty or laser resurfacing of the eardrum as a treatment option for patients with a patulous Eustachian tube.
2. describe the theoretical basis for performing cartilage tympanoplasty and laser resurfacing of the eardrum to relieve symptoms in patients with a patulous Eustachian tube.

Abstract

Objective: To determine if cartilage tympanoplasty or laser resurfacing of the eardrum is an effective treatment for symptomatic relief in patients with a patulous Eustachian tube.

Methods: Patients with a patulous Eustachian tube who were treated with cartilage tympanoplasty or with laser resurfacing of the eardrum were identified from the senior author's practice. Patients' symptoms and symptom severity pre- and post- operatively were compared using the Patulous Eustachian Tube - BBK Scale. Audiograms and tympanograms performed pre- and post- operatively were also examined to assess for objective change.

Results: In total 6 patients were identified with cartilage tympanoplasty, and 10 with laser resurfacing of the eardrum

Conclusion: Cartilage tympanoplasty, as routinely performed for tympanic membrane and attic reconstruction, is an effective treatment for many patients with symptomatic patulous eustachian tubes. The results for laser resurfacing are very variable, and can be short lived in many subjects, requiring repeat treatments.

13:44-13:51 **Stapes Surgery in Profound Hearing Loss Due to Otosclerosis** – S. Lachance, R. Bussi eres, Quebec, QC

Learning Objectives

By the end of the presentation, the audience should be able to:

- Understand the options of treatment for patients with advanced otosclerosis
- Understand the role of stapes surgery and cochlear implantation in advanced otosclerosis patients

Abstract

Objectives: The aim of this study is to determine the efficacy of stapes surgery as an alternative to cochlear implantation for patients with profound hearing loss due to advanced otosclerosis.

Methods: This is a retrospective study of 20 patients with bilateral profound hearing loss considered candidates for cochlear implantation who underwent stapes surgery. Pre-operative testing, intra-operative findings, complications and audiometric results are reported.

Results: The majority of patients had a significant improvement in subjective as well as objective hearing post-operatively. The audiometric results with the operated ear fitted with a hearing aid rendered a second intention cochlear implantation unnecessary in most of the patients.

Conclusion: Considering that stapes surgery is less invasive and less expensive than cochlear implantation, it should be performed as a primary surgery in patients with profound hearing loss due to advanced otosclerosis who would otherwise be candidates for an implant. In case of failure, it does not prevent cochlear implantation from being performed as a second-intention procedure.

13:51-13:58 DISCUSSION

13:58-14:05 **How We Do It - Surgical Management of Acquired Cholesteatoma Using a New Posterior Ear Canal Wall Mobilisation Technique** – J. Savage, M. Bance, Halifax, NS

Learning Objectives

At the end of the session, the audience will be able:

1. To discuss the difficulties of eradicating cholesteatoma from the middle ear and mastoid when leaving the posterior ear canal intact.
2. To describe the steps in mobilizing the posterior ear canal wall by using the methods explained in the presentation.
3. To list the pitfalls encountered by the authors in developing the technique and to appreciate our solutions to them.

Abstract

Objectives: Controversy in the optimal surgical technique to eradicate acquired cholesteatoma has so far not been solved, in particular how best to deal with optimal access and disease eradication whilst leaving the posterior ear canal wall intact. The objective of this presentation is to describe a new technique of mobilising the posterior ear canal wall, providing the benefits of canal wall down surgery whilst maintaining the optimal quality of life to the patient provided by intact canal wall surgery.

Methods: The method of mobilising the posterior ear canal will be described in detail with video and intraoperative pictures. In addition, the pitfalls we have faced whilst developing the technique will be discussed along with their solutions. This technique has been performed on 7 patients in our practice.

Results: Short term follow results of patients undergoing this technique will be presented.

Conclusions: We have developed a new surgical technique in mastoid surgery to enable successful eradication of acquired cholesteatoma with

Tuesday, May 24, 2011 – SAANICH ROOM continued...

optimal visualisation of the middle ear and mastoid whilst providing the benefits of intact canal wall surgery regarding patient recovery and quality of life.

14:05-14:12 **Wideband Energy Reflectance - A Comparison of Findings in Meniere's Disease and Tensor Tympani Spasm** – B. Williams, M. Bance, J. Savage, F. Makki, P. Garland, Halifax, NS

Learning Objectives

At the end of the session, the audience will be able:

1. To discuss the basic principles of wide band energy reflectance and its uses in otology.
2. To describe the characteristic pattern of wide band energy reflectance with increased tensor tympani spasm.
3. To compare the tensor tympani spasm pattern of reflectance with that of Meniere's Disease and draw comparisons as a result of this.

Abstract

Objectives: It has been proposed that tensor tympani spasm contributes towards the pathogenesis of Meniere's Disease and therefore tenotomy is a valid surgical treatment. The objective of this session is to present data obtained by performing wide band energy reflectance (WBER) on patients from our clinic with Meniere's Disease compared with in vitro WBER of simulated tensor tympani spasm.

Methods: 20 patients diagnosed with Meniere's Disease, as defined by the American Academy of Otolaryngology - Head and Neck Surgery criteria, were entered into the study. WBER recordings were taken from both ears in a sound proof booth. This data was then compared with the WBER pattern of tensor tympani spasm, based on temporal bone studies in our laboratory.

Results: In Meniere's Disease, reflectance has large variability over all frequencies tested. This is in contrast to simulation of tensor tympani reflectance, which has a distinct pattern of increased reflectance up to 2 kHz as tension of the tendon increases.

Conclusions: Our results suggest that, based on the use of WBER, tensor tympani spasm does not appear to play a role in the aetiology of Meniere's Disease. More research is needed however.

14:12-14:19 DISCUSSION

14:19-14:26 **Access Barriers Hinders the Effective Treatment of Chronic Suppurative Otitis Media in Uganda** – P. Mick, B. Westerberg, E. Kakande, A. Benton, R. Byaruhanga, Toronto, ON

Learning Objectives

By the end of the presentation, attendees should understand:

1. The scope of the global disease burden of CSOM.
2. World Health Organization goals with respect to preventing hearing loss.
3. The "Access Framework" of barriers to care.
4. Barriers faced by Ugandan patients trying to access care for CSOM.
5. Possible solutions to the problem.

Abstract

Objective: We aimed to identify barriers to treatment access faced by Ugandan patients with chronic suppurative otitis media (CSOM) so that rational programs to improve outcomes can be designed and implemented.

Methods: Patients of all ages attending three different ear clinics in Uganda in October and November, 2009, were asked to participate if they had a history of six or more weeks of purulent otorrhea. Semi-structured interviews were performed to identify access barriers. The barriers were divided into acceptability, affordability and availability categories.

Results: Twenty-eight patients with a mean age of 27 were included. The median length of illness was 10.5 years. The most common symptom other than otorrhea was hearing loss, reported by 64%. Critical opportunities to treat more easily-cured acute disease were lost because of delayed presentation to allopathic medicine. Delays were usually due to the use of herbal medicines or the belief that otorrhea was "normal." The patients were poorly educated about CSOM and how to find appropriate treatment. Two-thirds reported difficulty paying for treatment costs, especially medications and transport. The most commonly cited unavailable aspects of care were local otolaryngologists and medications.

Conclusion: Public education programs encouraging urgent treatment of new-onset otorrhea would likely have the most impact in improving outcomes. More otolaryngologists and inexpensive medications are also needed.

14:26-14:33 **Otology Surgery in Uganda: Needs Assessment** – J. Lea, B. Westerberg, R. Mondin, C. Huins, Vancouver, BC

Learning Objectives

At the conclusion of the presentation Otolaryngologists and allied health care staff will be able to:

1. Describe the scope of unmet surgical need in Uganda within the field of Otology

2. Provide an outline of needs in terms of education, surgical skills and resources
3. Discuss future initiatives in international surgery to address the unmet surgical need

Abstract

Objectives: To determine the scope of otology practice by Otolaryngologists in Uganda. To delineate areas of need, and provide future direction.

Methods: Surveys were conducted in Uganda of Residents and Consultant staff. Surveys addressed needs in three main areas: clinical knowledge, surgical skills, and resources. Comfort with procedures and management of complications was assessed on a scale of 0-10 (0=no prior exposure, 10=comfortable performing the procedure alone).

Results: 45% of practicing Otolaryngologists and all residents training in Uganda participated in the study (n=14). 58% of otology procedures performed were self-taught. Perceived limited comfort was identified with tympanoplasty (6.1), cholesteatoma (6.8), facial recess (2.1), and meatoplasty (5.8). Apparent comfort with CWD (7.9) and CWU (8) procedures was incongruent with 44% still relying on "hammer and gouge". Average comfort with otology procedures among residents was low (2.2). Avoidance of otology surgery was often attributed to limited expertise in managing potential complications. Resource limitations were common. No stapes surgery is performed.

Conclusions: Perceived needs in otology surgery are high in Uganda in terms of knowledge, surgical skill and resources. Knowledge of the above delineated needs will assist with the success of future otology missions in the region.

14:33-14:40 DISCUSSION

14:45-15:30 WORKSHOP #18

Muscle Tension Dysphonia: Diagnosis and Management – J. Anderson, Toronto, ON, T. Brown, Halifax, NS, N. Yammine, Montreal, QC, M. Morrison, Vancouver, BC, K. Kost, Montreal, QC

Learning Objectives

At the end of this workshop on muscle tension dysphonia, participants should:

1. Increase their ability to recognize and diagnose MTD.
2. Appreciate the variability of clinical presentation with the use of interactive case samples.
3. Appropriately manage patients with MTD.

Abstract

Muscle Tension Dysphonia is a relatively common voice disorder diagnosed clinically based on history, indirect laryngoscopic findings and perceived voice quality. The variability in the dysphonia and clinical presentation has often made diagnosis difficult or delayed.

The workshop will discuss the multifactorial nature of this disorder, broad variation of clinical presentation utilizing patient samples and the management of MTD.

The etiologic factors include psychosocial and personality factors, voice misuse and compensatory behaviour due to an organic disease. Management is multidisciplinary with otolaryngology, speech language pathology and not infrequently, psychiatric counselling. Participants in the workshop should have an improved understanding of the diagnosis and management of this common voice disorder.

15:30-16:00 COFFEE

16:00-17:00 WORKSHOP #21

The Joint Anaesthesiologist/Otolaryngologist Approach to Airway Endoscopy in the Neonate and the Child – H. El Hakim, B. Tsui, Edmonton, AB

Learning Objectives

Upon attending the workshop the attendees will

1. Appreciate the essential content of communication between the endoscopist and the anesthesiologist for managing airway challenges in children and neonates
2. Appreciate the different scenarios of airway pathology management
3. Appreciate the importance of concomitant information regarding the general health of the patient in question and their source of referral.

Abstract

Objectives: The fundamentals of successful anesthesia and examination of the airway in children and neonates are timeliness, instrumentation, communication, and experience. The intent is to display the importance of these parameters through an interactive session

Method: The focus will be to provide an overview of some advanced considerations for performing endoscopy, in children with compromised airways. There is an emphasis on those aspects important for the anesthesiologist, but also a close look at the presentation and nature of some situations, which will vary in acuity, in order to comprehensively illustrate the various fundamental components mentioned above. The choice of

presented cases was tempered and preceded by an account of a consecutive case series collected prospectively by one pediatric otolaryngologist. This directs the emphasis of this workshop on training and education, to enable all the attendees to deepen their understanding of how to maintain homeostasis during these critical procedures.

Conclusions: Acuity, nature and level of airway pathology, aim of endoscopy (diagnostic or therapeutic), prior familiarity, source of referral and concomitant health problems are important parameters which will be emphasized. Knowledge of the epidemiology of airway pathology is of paramount importance to anticipate the challenges and equip the center.

**TUESDAY, MAY 24, 2011
OAK BAY ROOM, VCC**

08:00-09:00 **PLENARY SESSION** (*Lecture Theatre*)

**PAPERS: Head and Neck Surgery 1
CHAIR: TBA**

09:00-09:07 ***Aberrant DNA Methylation and Resulting Expression Changes as a Driving Force in the Early Stages of Oral Cancer Development*** - S. Hughes, C. Garnis, I. Tsui, C. Poh, Vancouver, BC

Learning Objectives

From this presentation the audience/reader will be able to appreciate the importance of understanding the earliest stages of oral cancer development and the potential clinical impact of such knowledge.

The audience/reader will also be able to evaluate the utility of whole genome data integration as a tool for determining novel candidates involved in disease etiology.

And finally, the audience/reader will be able to describe the role of the key genes involved in driving oral cancer tumorigenesis.

Abstract

Oral cancer is one of the world's leading causes of cancer death, with late stage disease diagnoses and high rates of recurrence accounting for poor survival rates. Understanding the initiating genomic alterations leading to disease development, will lead to earlier and more directed treatment therapies.

Objectives: Our objective is to identify genes that exhibit aberrant DNA methylation and subsequent expression changes in the earliest stages of oral cancer (OC) progression.

Methods: We profiled multiple histologically different biopsies from OC patients. Gene expression and DNA methylation status was determined using Agilent 4x44K and Illumina Infinium platforms. Using strict thresholds we compiled a list of candidate genes that exhibited decreased expression with a corresponding increase in methylation, and vice versa.

Results: We have identified and validated both known genes as well as novel candidates. We have functionally shown that these genes exhibit changes in their DNA methylation state resulting in direct changes in expression.

Conclusions: We have shown that there are a number of key genes and pathways dysregulated in the premalignant stages of oral carcinogenesis due to aberrant methylation patterns, which may be important in driving progression. Elucidating these genes could result in diagnostic markers and targets for therapeutic interventions, results in improved patient care and overall survival.

09:07-09:14 ***Contact Endoscopy as a Novel Technique in the Detection and Diagnosis of Oral Cavity Mucosal Lesions in the Head and Neck*** – C. Szeto, J. Franklin, A. Nichols, K. Fung, J. Yoo, London, ON

Learning Objectives

- 1) To describe contact endoscopy as a non-invasive optical technique of in vivo microscopic examination of oral mucosal lesions of the head and neck.
- 2) To understand the diagnostic potential, accuracy and limitations of contact endoscopy.

Abstract

Background: Contact endoscopy (CE) is a promising method of in vivo microscopic examination whereby a rigid telescope is placed on a dye stained mucosa allowing evaluation of the superficial cell layers of the epithelium. This technique produces real-time, highly magnified images of cellular architecture of surface mucosa comparable to histology without the need for biopsy.

Objective: To determine the efficacy of CE in the detection of oral cavity mucosal pathology and to evaluate the diagnostic potential, accuracy and limitations of CE in mucosal lesions of the head and neck.

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Methods: Patients with lesions of the oral cavity were prospectively enrolled. CE was performed and images recorded and then reviewed by a pathologist blinded to the final histopathologic diagnosis. A routine biopsy was then taken for paraffin section. CE diagnosis was compared with histopathological diagnosis.

Anticipated results: Contact endoscopy images will be compared with corresponding paraffin section histopathology diagnoses. Sensitivity, specificity and accuracy will be calculated. The study is currently in progress, and results will be presented.

Conclusion: Contact endoscopy is a promising non-invasive optical technology that may be a useful adjunct in the evaluation and diagnosis of mucosal oral cavity pathology.

09:14-09:21 **Elevated Neutrophil to Lymphocyte Ratio as a Preoperative Prognostic Indicator of Head and Neck Cancers** – A. Rassouli, A. Zeitouni, R. Castano, Montreal, QC

Learning Objectives

The clinician would understand the possible implication of increased NLR in the prognosis of head /neck cancers and utilize that in clinical practice.

Abstract

Objective: Neutrophil to lymphocyte ratio (NLR) is used as an indicator of inflammatory status. Preoperatively elevated NLR has been associated with both increased risk of mortality and recurrence in vascular, cardiovascular, ovarian, lung non-small cell and colorectal patients. This ratio has not been specifically studied in head and neck cancers (HNC).

Methods: A retrospective review of patients diagnosed with HNC at Royal Victoria Hospital was performed. Data acquisition was through electronic patient medical record. Pre-operative at-diagnoses neutrophil and lymphocyte levels were obtained. Patient mortality and recurrence were obtained from chart review and head and neck cancer database. ANOVA test was used to estimate the effect of NLR on survival (SPSS).

Results: During the study period of 2006-2009, 88 patients were diagnosed at various stages with HNC. Demographic data, total white count, neutrophil count, and stage were acquired. Subsequently, the overall and stage specific survival in relation to NLR were calculated.

Conclusions: Our preliminary findings indicate that unlike published data in various cancer types, decreasing preoperatively NLR is associated with higher risk of mortality and recurrence that may suggest a different inflammatory response in HNC. This ratio can be used as a potential predictor of mortality and recurrence in HNC.

09:21-09:28 DISCUSSION

09:28-09:35 **Prognostic Markers in Surgically Treated Oral Cavity Squamous Cell Carcinoma** – S. Chandarana, J. Dort, A. Klimowicz, N. Brockton, S. Petrillo, L. Rudmik, A. Magliocco, H. Lau, Calgary, AB

Learning Objectives

1. By the end of this session, the listener will be able to describe the prevalence of 2 biomarkers in oral cavity squamous cell carcinoma in a cohort of surgically treated patients.
2. By the end of this session, the listener will be able to consider the association between expression of biomarkers and patient outcome.
3. By the end of this session, the listener will be able to consider the impact of biomarkers on treatment planning for head and neck cancer.
4. By the end of this session, the listener will be able to describe the role of tissue microarrays and automated quantitative immunohistochemistry (AQUA) for the high throughput evaluation of marker expression in tumors.

Abstract

Background: Predictive biomarkers offer the potential for better risk stratification and tailored treatment. Carbonic Anhydrase IX (CAIX) expression (hypoxic marker), and p16 (HPV surrogate) may predict survival in patients with oral cavity squamous cell carcinoma (OCSCC).

Objective: To investigate the association between survival and two candidate predictive biomarkers in surgically treated OCSSC patients.

Methods: Clinical outcomes were collected for 61 patients with OCSCC treated with surgery +/- radiation. Tissue microarrays were constructed from triplicate cores from archived tumor tissue. Expression and distribution of p16 and CAIX were measured by automated quantitative immunohistochemistry (AQUA). Kaplan-Meier analysis was used to assess the survival impact of each biomarker.

Results: The mean age for the cohort was 59. 44% of patients were AJCC stage IV (primarily due to nodal burden). 16/61 (26%) of patients expressed CAIX at high levels. High stromal CAIX expression was significantly associated with worse disease-specific 5-year survival ($p < .005$). 6/61 (10%) of patients were p16 positive. The trend in survival improvement associated with p16-positive tumours was not statistically significant. **Conclusion:** Elevated stromal CAIX expression is associated with reduced 5-year survival in OCSCC. Stromal CAIX expression may identify high-risk patients in which new treatment algorithms may be necessary in patients with OCSCC.

09:35-09:42 **Ki-67 Status Predicts Treatment Outcome in Early Glottic Cancer** – J. Basmaji, A. Nichols, J. Yoo, K. Fung, J. Franklin, C. Szeto, D. Palma, J. Mymryk London, ON

Learning Objectives

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

1. Understand the value of biomarkers in predicting outcome in head and neck cancer.
2. Appreciate the prognostic significance of Ki-67 in early glottic cancer.

Abstract

Objective: To investigate whether nuclear antigen Ki-67 and epidermal growth factor receptor (EGFR) overexpression can predict radiotherapy failure in early glottic cancer.

Methods: A retrospective search was performed to identify patients with T1 and T2 glottic cancer treated exclusively with radiation. Seventy-four patients were identified, including fourteen treatment failures with a mean follow up time of 42 months. Pretreatment tumor specimens were immunostained for Ki-67 and the EGFR. Immunohistochemistry results were correlated with patient survival by constructing Kaplan-Meier curves and comparing them using the log-rank test.

Results: EGFR was overexpressed in 19 of 74 tumors, while Ki67 was overexpressed in 30 of 74. EGFR did not correlated with treatment outcome, while Ki-67 was found to be significantly associated with local tumor recurrence ($p < 0.05$).

Conclusions: Ki-67 is significantly associated with local recurrence in early glottic carcinoma. This information can potentially be used to prognosticate and guide treatment decisions.

09:42-09:49 **Employment of Patients Following Treatment of Advanced Head and Neck Cancer** – Y. Alrajhi, H. Seikaly, R. Chowdhury, J. Harris, Edmonton, AB

Learning Objectives

By the end of this 8 minutepresentation,the audiences will understand that reconstruction of the mandibulectomy defects using osseous free flap is an excellent reconstructive option and it als provides an excellent platform for Osseointegration dental implant rehabilitation.

Abstract

Background: The mandible provides the framework that supports the function of the upper aerodigestive tract and provides the cosmetic contour of the lower third of the face. Defects that interrupt the mandibular continuity result in significant functional deficit that is dependent on the site and size of the discontinuity.

Objective: This study examines prospectively the functional outcomes and dental rehabilitation of a cohort of patients that have undergone mandibulectomy and primary osseous free flap reconstruction.

Methods: Speech and swallowing data were gathered prospectively at three evaluation times (pre-operatively, pre-radiation therapy, and post-radiation therapy). Single words and sentences were recorded and analyzed for speech intelligibility. Modified barium swallows of liquid, pudding, and cookie consistencies were analyzed and graded. Dental implantation and rehabilitation was recorded

Results: 80 patients were reviewed. 66 were reconstructed with fibula, 12 with scapula and 2 with radius. There was no significant difference across any of the evaluation times for single word or sentence intelligibility. The swallowing data showed no instances of post treatment aspiration. The 1-year g-tube rates were 6%. 26 patients had undergone successful dental implantation and rehabilitation

Conclusions: Osteocutaneous free flaps are an excellent reconstructive option for mandibular defects.

09:49-09:56 DISCUSSION

09:56-10:03 **Function and Quality of Life Outcomes After Glossectomy and Free Flap Reconstruction** – H. Seikaly, J. Harris, D. O'Connell, Y. AlRajhi, K. Ansari, N. Rizk, Edmonton, AB

Learning Objectives

- 1) Become familiar with the free flap reconstruction of tongue defects.
- 2) Understand the functional and QOL outcomes of tongues reconstruction.

Abstract

Background: Surgical manipulation of the tongue is essential in the treatment of oral cancer and often results in impairment of function.

Objective: to examine the functional outcomes of a prospective cohort of patients that had oral glossectomy and free flap reconstruction.

Methods: 91 patients were included in the review. Speech and swallowing evaluations were performed prospectively in three evaluation periods (pre-operative, postoperatively, and post-radiation). Quality of life was measured by EORTC H&N-35 questionnaire.

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Results: 68 patients had less than 50% tongue defects, 15 had 75%, and 8 had 100%. Reconstruction was performed with modified RFFF in 74, ALT in 12 and scapula in 5. Speech intelligibility was not significantly different at any measurement time for patients with defects of 75% or less. There was a significant difference in speech discrimination between preoperative and postoperative time periods in patients with 100% defects. G-tube rates were 0% for patients with defects of 75% or less, and 50% for patients with 100% defects. All surviving patients had excellent quality of life scores.

Conclusions: Free flap reconstruction of the tongue provides acceptable function for most patients. Function after total glossectomy is limited.

10:03-10:10 **Correlation of Quality of Life Measures with the Objective Cutometer Measurements of Fibrosis in Head and Neck Patients** – B. Turner, J. Franklin, C. Chin, A. Nichols, K. Fung, J. Yoo, London, ON

Learning Objectives

- To understand the major morbidities in treatment of head and neck cancer.
- To understand the function of the cutometer in the quantification of neck fibrosis.
- To identify the various tools for measuring quality of life in head and neck cancer patients.
- To understand the correlation between objective fibrosis measurements and quality of life measures.

Abstract

Objective: The treatment for head and neck cancer are known to cause significant morbidity including skin fibrosis. The cutometer is a validated tool for the quantification of this fibrosis. The goal of this study was to correlate quality of life data with cutometer results.

Study Design: Prospective cross-sectional study of patients in the head and neck clinic.

Methods: All patients enrolled underwent cutometer measurement and completed quality of life questionnaires at the same visit.

Results: 536 Necks were analyzed (184 controls, 72 radiated, 99 chemo-radiated, 58 radiation and surgery, 50 chemo-radiation and surgery, 56 surgery alone and 17 other). Quality of life measures were compared to the quantitative measures of fibrosis from the cutometer.

Conclusions: The cutometer measures of fibrosis mirrored the qualitative measurement of quality of life further validating the cutometer as a tool to quantify morbidity in head and neck cancer treatment.

10:10-10:17 **Identifying and Managing Patient Distress in Head and Neck Cancer** – C. Bornbaum, P. Doyle, K. Fung, J. Franklin, A. Nichols, J. Yoo, London, ON

Learning Objectives

By the end of this session, participants will understand the relationship between cancer stage, treatment type, distress level and factors related to quality of life in patients with head and neck cancer.

By the end of this session, participants will learn the importance of screening for distress during the first year post-diagnosis and be equipped with specific and practical strategies to identify and manage distress efficiently in their own clinical practice.

Abstract

Overview: Both short- and long term outcomes for those diagnosed with head and neck cancer (HNCA) may be influenced by multiple factors. Identification of distress secondary to a diagnosis of HNCA may provide a critical dimension that influences perceived quality of life (QoL).

Objectives: To assess distress and QoL in those diagnosed with HNCA using validated measures.

Methods: Cross-sectional, self-report, survey design. Fifty adults diagnosed with a malignancy of the head and neck served as participants. At time of assessment, post-diagnosis time ranged from 3 to 12 months. All participants completed a validated distress screening measure, the Brief Symptom Inventory 18 (BSI-18), as well as the EORTC general QoL assessment tool (QLQ-C30) and the HNCA module (EORTC-QLQ-H&N35).

Results: Approximately 30% of participants demonstrated significant levels of distress based on the BSI-18. Additionally, distress was found to be significantly related to QoL status and treatment type.

Conclusions: Screening for distress in those with HNCA may provide a valuable measure that permits early identification of problems that may influence QoL outcomes. The ability to identify distress early may also facilitate timely intervention to reduce distress and optimize QoL.

10:17-10:30 DISCUSSION

10:30-11:00 COFFEE

PAPERS: Education

CHAIR: TBA

11:00-11:07 **TBA**

11:07-11:14 **Development and Validation of an Objective Structured Assessment of Technical Skill for Tympanoplasty** – D. Schramm, O. Marghani, T. Wells, M. AlHajry, Ottawa, ON

Learning Objectives

- Understand the processes involved in the design and validation of an objective structured assessment of technical skills for tympanoplasty.
- Be able to utilize a structured assessment of technical skills for the evaluation of otolaryngology residents.
- Identify opportunities for developing an objective structured assessment of technical skills for the evaluation of otolaryngology residents.

Abstract

Background: Use of an objective structured assessment of technical skills (OSATS) is a valid method of evaluation of the Royal College of Physicians and Surgeons of Canada Canadian Medical Education Directives for Specialists (CanMEDS) Medical Expert competency. Development of a valid appraisal of intra-operative technical proficiency in otologic surgery aligns with CanMEDS objectives. A structured evaluation of otologic technical skills could be used in conjunction with The Global Rating of Operative Microscopic Surgical Skills (GROMSS), an objective assessment tool designed to evaluate intra-operative microscopic competence in otolaryngology training programs.

Objective: The aim of this study was to develop and evaluate the validity of a structured assessment of competency in the performance of tympanoplasty for otolaryngology residents.

Methods: Utilizing a modified Delphi process, an objective structured assessment of competency in the performance of tympanoplasty was developed by otologists, otolaryngology residents, and medical education experts.

Results: A structured assessment of tympanoplasty competency was created. Inter-observer reliability was assessed. Global evaluation of otologic skills was correlated with the results of the structured appraisal of tympanoplasty competency.

Conclusions: An objective structured assessment of technical skills for tympanoplasty is a valid method of evaluation of the CanMEDS Medical Expert competency in otologic surgery.

11:14-11:21 **Development and Validation of a Palpable High-fidelity Construct for Teaching Physical Examination of the Neck** – J. Xu, K. Fung, B. Rai, J. Glucksman, G. Campbell, London, ON

Learning Objectives

By the end of this presentation, the audience will be able to:

- appreciate the issues and challenges pertinent to medical education with respect to physical examination of the neck.
- understand the concept of creating realistic tissue constructs using synthetic Polyvinyl-alcohol cryogel (PVA-C) polymer.
- understand the potential role of tissue-mimicking models in medical education.

Abstract

Purpose: The ability to detect neck masses and gauge qualities such as size, location, and consistency is critical for patient care and an important clinical skill for all physicians. Medical students currently learn neck palpation by practicing on healthy standardized patients, however studies of similar procedures have shown that educational models with simulated pathology helps improve technique and confidence. Our goal is to create a tissue-mimicking neck construct with palpable masses, and to assess its validity and effectiveness for medical education.

Methods: Neck constructs were made to simulate the feel of real tissue with Polyvinyl-alcohol cryogel (PVA-C), a non-toxic and biocompatible polymer that express favourable tissue-mimicking viscoelastic properties. Design was based on high-resolution cadaveric sections obtained from the Visible Human Project, which were digitally reconstructed to create physical molds through stereolithography.

Results: A life-like neck construct was built and consists of six components: muscle, larynx, spine, soft tissue, pathological nodes, and skin. Three prototypes have been completed and evaluated by otolaryngology consultants and residents.

Discussion: Based on feedback, future models will incorporate additional structures such as the mandible and hyoid bone. The best prototype will be formally studied for validity, and assessed in a randomized-controlled trial to evaluate how it impacts students' ability to detect neck masses.

11:21-11:28 **DISCUSSION**

11:28-11:35

Use of Simulation Training to Improve Efficiency of Trans-Nasal Fiber-Optic Flexible Laryngoscopy – M. Deutschmann, W.K. Yunker, S. Beveridge, M. Andreassen, J.D. Bosch, Calgary, AB

Abstract

To determine if medical students and residents measurably improve their skills utilizing simulated trans-nasal fiber-optic flexible laryngoscopy.

Each learner performed two examinations, the first occurring before the simulator teaching. Learners were then blindly randomized to either receive simulator training or not. There were equal numbers of learners in each group. Simulator training consisted of using a low-fidelity simulator for 45 minutes in order to practice basic endoscopy skills. Learners were scored by the principle investigator on time to visualize the glottis, the percentage of time they maintained adequate visualization, and the number of collisions with mucosa by randomly and blindly reviewing the videotapes. The learner, patient and laryngologist also blindly assessed the learner's ability to perform the endoscopy on a subjective scale.

64 learners were recruited for this study. Midpoint analysis did not reveal a significant difference in performance of the two groups.

Final analysis will be presented.

11:35-11:42

Virtual Reality Myringotomy Simulation: Tackling Real-Time Soft-Tissue Deformation – H. Alsaffar, S. Agrawal, A. Ho, P. Doyle, H. Ladak, London, ON

Learning Objectives

1. By the end of the presentation, attendees will be able to appreciate difficulties in real-time soft tissue simulation
2. Attendees will be able to describe three cutting algorithms that have been incorporated into the myringotomy simulator
3. Attendees will be able to evaluate these algorithms through the face validity data presented
4. Attendees will be able to consider the value of surgical simulation in current residency training programs

Abstract

Background: Virtual reality surgical simulation can enable residents and surgeons to acquire surgical skills and rehearse surgery while minimizing risks to patients. The ability to create simulators with immersive three-dimensional graphics, sound, and haptic (touch) feedback is now possible with the recent increase in computational and graphics processing capabilities. Soft tissue deformation has remained an obstacle in surgical simulation because of the complexity of calculations and the difficulty in obtaining real-time performance.

Methods: 1) Develop a 3D mass-spring model of the tympanic membrane with the capability of calculating real-time deformations and cutting with surgical instruments.

2) Compare the three implemented cutting algorithms to assess realism of each algorithm in myringotomy.

Results: A 3D mass-spring model of the tympanic membrane was created and three soft-tissue cutting models were successfully implemented. Each of these models were capable of calculating deformations and cutting in real-time. The algorithms and face validity results will be presented.

11:42-11:49

Face and Content Validity of a Novel Three-Dimensional Temporal Bone Surgical Simulator – P. Mick, J. Chen, J. Mainprize, J. Hochmann, Toronto, ON

Learning Objectives

At the end of the presentation, participants should:

1. Understand the rationale for creating a temporal bone surgical simulator.
2. Understand the techniques used to create the model.
3. Have seen a multimedia presentation demonstrating the simulator and have had the opportunity to handle it in person.
4. Understand results of face and content validity studies.

Abstract

Objectives: To construct high fidelity free form temporal bone model (HFTBM) from a CT dataset utilizing rapid prototyping technologies, and to determine face and content validity of the models as surgical simulators.

Methods: Cadaveric CT images were imported to a 3D image processing program for segmentation. The segments were then exported to a stereolithography format file to facilitate photo-printing using a Fused Deposition Modeling printer. The construct of our synthetic temporal bones utilizes "rapid prototyping" to create solid freeform fabrication. Numerous iterations with various adjustments in materials and techniques were

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performed to achieve a lifelike product. Face and content validity questionnaires were then completed by non-experts and experts, respectively, to determine the resemblance of drilling the model to drilling a real temporal bone.

Results: The HFTNM could be handled using conventional surgical instruments, and demonstrated anatomical fidelity both on the surface and with respect to internal structures. Haptic feedback resembled that of a real temporal bone. The model demonstrated face and content validity.

Conclusion: The HFTNM demonstrated face and content validity as a replica of a human temporal bone. Content and construct validity studies may now be performed to confirm its role as a surgical simulator.

11:49-11:56 DISCUSSION

11:56-12:03 **Standardized Patient Encounters and Video-assisted Feedback in Teaching Ethics and Communication Skills to Otolaryngology-Head and Neck Surgery Residents** – A. Fanous, L. Nguyen, J. Rappaport, Montreal, QC

Learning Objectives

By the end of this session, the students, residents and otolaryngologists will be able to appreciate the significance of a validated half day ethics course using medical simulation tailored specifically to otolaryngology- head and neck surgery residents, in terms of both ethics knowledge and communication skills.

Abstract

Objective: This study sought to develop and evaluate a medical ethics curriculum designed specifically for Otolaryngology - Head and Neck Surgery residents using medical simulation.

Methods: A half-day workshop was developed consisting of 3 simulation sessions with standardized patients, immediate small-group feedback and large-group video-assisted debriefings. Residents were evaluated on their ethical reasoning and communication skills during the simulation scenarios, and were tested on their ethical and legal knowledge pre- and post-workshop. Participants then evaluated the workshop on a 5-point Likert scale.

Results: A total of 16 residents from a single institution have participated in the workshop. Ethics and legal knowledge improved significantly amongst residents ($p=0.002$). The survey data are as follows: self-perceived improvement in ethics skills ($p<0.0001$) and communication skills ($p<0.0001$), realism 3.87 (SD 0.86), relevance 4.16 (SD 0.78), quality of debriefings 4.1 (SD 0.4), usefulness of the workshop 4.0 (SD 0.63). 88% of residents would recommend this course to others in their field.

Conclusion: To our knowledge, this is the first attempt to develop an ethics curriculum tailored to OTL - HNS residents. Our study demonstrates that medical simulation is an effective teaching method that provided a measurable improvement in both ethics knowledge and communication skills.

12:03-12:10 **A Global Rating of Endoscopic Surgical Skills (GRESS) for the Assessment of Otolaryngology residents, A Pilot Study** – O. Marglani, Alherabi, T. Alandejani, A. Javer, A. Alzalabani, A. Chalmers – Jeddah, SA

Learning Objectives

1. To be familiar with different assessment tools used in the surgical education community.
2. How to construct and validate these tools.
3. To show how these tools provide systematic and comprehensive feedback as part of the learning cycle.
4. To outline the Potential applications of these tools in tracking resident development throughout postgraduate training and offers a structured means of certifying operative skills.
5. How to apply these tools into residency programmes.
6. To learn about the potential research opportunities in this field.

Abstract

Endoscopic sinus surgery (ESS) is an essential component in otolaryngology surgery training. Competence has become an important issue in current surgical practice and training. There is also a pressing need for an intra-operative assessment tool that meets high standards of reliability and validity to use as an outcome measure for different training strategies

Purpose: The goal of our project was to develop such an assessment tool for ESS that is valid, and reliable.

Methods: A 2-page evaluation form was developed in conjunction with the OSATS Objective Assessment of technical Skills Surgery evaluation form developed by Renzick et al in Toronto to assess the surgical skills of residents. A 1 to 5 (5 = excellent) scale was used for evaluation. The (GRESS) evaluation instrument was designed with input from academic otolaryngologist, fellowship trained rhinologists and experts in medical education, The Experts' comments were incorporated, establishing face and content validity. Residents from various levels of training were assessed objectively using this instrument.

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Results: A total of 31 assessments were completed for 15 residents who were evaluated by 5 faculty members as they performed ESS on patients over a period of 3 years from 2006 -2009.

Conclusions: This pilot study demonstrated GRESS to be a valid and reliable assessment tool of operating room performance.

12:10-12:17 **A Global Rating of Operative Microscopic Surgical Skills (GROMSS) for Otolaryngology Residents. A Pilot Study** – O. Marglani, T. Ross, K. Alnoury, D. Schramm, A. Alzalabani, A. Chalmers, F. Kozak, B. Westerberg, Vancouver, BC

Learning Objectives

1. To be familiar with different assessment tools used in the surgical education community.
2. How to construct and validate these tools
3. To show how these tools provide systematic and comprehensive feedback as part of the learning cycle.
4. To outline the Potential applications of these tools in tracking resident development throughout postgraduate training and offers a structured means of certifying operative skills.
5. How to apply these tools into residency programmes.
6. To learn about the potential research opportunities in this field

Abstract

Background: The requirement of a valid and reliable assessment of intra-operative technical competence is an ongoing issue in surgical training programs. We present an assessment tool that is designed specifically for microscopic surgical procedures in otolaryngology training programs called the Global Rating of Operative Microscopic Surgical Skills (GROMSS).

Objective: The aim of this study was to develop a global rating of operative microscopic surgical skills (GROMSS) of various microscopic procedures performed by otolaryngology residents to assess this new tool's inter-observer and intra-observer reliability and construct validity, and to be used in otolaryngology surgical evaluation.

Design: Prospective, observational data collection.

Results: The (GROMSS) evaluation instrument was designed from input of academic Otolaryngologists, Otolologists/neuro-otologists and experts in medical education. 20 residents from various levels of training were assessed objectively while performing different microscopic surgical procedures using this instrument.

Conclusions: It is possible to objectively measure microscopic surgical skills with good reliability and construct validity; it has the potential of assessing the surgical competence of residents and aid in their overall evaluation.

12:17-12:24 **Mental Practice in Surgical Skills: A Pilot Study on Development, Validity and Implementation for Mastoidectomy** – A. Conlin, B. Westerberg, M. Bance, S. Kilty, R. Sidhu, Vancouver, BC

Learning Objectives

By the end of this session, the participant will:

1. be familiar with the applicability of mental practice to learning a complex psychomotor skill;
2. understand methods to develop and validate a mental practice script for mastoidectomy surgery;
3. be presented with evidence regarding the impact of mental practice on the development of mastoidectomy skills among Post Graduate Year 5 residents.

Abstract

Background: Mental practice (MP), the cognitive rehearsal of a task in the absence of overt movement, has been successfully used in teaching complex psychomotor tasks, including sports, music, and surgical skills.

- Objectives:**
1. To develop an MP protocol for mastoidectomy.
 2. To evaluate the validity of the mastoidectomy MP protocol.
 3. To assess the impact of MP on mastoidectomy surgical skills among Post-Graduate Year 5 (PGY-5) residents.

Methods: Three expert surgeons were interviewed using verbal protocol analysis to develop a mastoidectomy MP script. Ten Otolaryngology residents will assess the validity of the MP script through a pre- and post-test repeated measures design using the Imagery Manipulation Checklist.

To assess impact, 16 PGY-5 residents will be randomized into 2 groups. All residents will be video-recorded performing a mastoidectomy in a temporal bone lab. The intervention group will then receive MP training for mastoidectomy, while the control group will undergo textbook study. Subjects will be video-recorded performing a second mastoidectomy. Changes in pre- and post-test scores using validated expert ratings will be statistically analyzed.

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Conclusions: MP embodies the characteristics of the ideal means of teaching surgical residents, as it is safe, accessible, and affordable; we anticipate that it will also be efficacious.

12:24-12:31 DISCUSSION

12:30-13:30 **LUNCH**

13:00-13:30 MINI-WORKSHOP #3

In Tribute to Sir Morell MacKenzie: Our Most Unusual and Memorable Complication – J. Rutka, Toronto, ON, L. Makerewich, Niagara Falls, ON, N. Longridge, Vancouver

Learning Objectives

1. Learn the history behind the dilemma faced by Sir Morell MacKenzie in the management of Crown Prince Frederick.
2. Understand why the complications that occurred were unusual, unexpected and serious.
3. Recognize, evaluate and devise treatment strategies when things go terribly wrong at surgery.

Abstract

What happened to Sir Morell MacKenzie is testament that bad things can happen to good physicians. Similarly unusual complications in surgery can occur even in the best of hands. Three senior surgeons discuss the most usual medical and surgical misadventures that have occurred in their collective practises over the years. What happened, how they were managed and whether they could have been prevented is discussed with brutal honesty. It is hoped that their experiences will educate and prove instructive to those who practice otolaryngology.

PAPERS: Pediatric Otolaryngology

CHAIR: TBA

13:30-13:37

Associated Large Airway Lesions, Esophagitis, and Atopic Conditions to Atypical Croup in a Consecutive Series of Children – T. Cooper, H. El Hakim, G. Kuruville, R. Persad, Edmonton, AB

Learning Objectives

By the end of this session, the audience will be able to:

1. Describe the prevalence of large airway, esophageal and atopic diagnoses in a consecutive series of children with atypical croup (AC).
2. Analyze the findings with respect to their relevance to the available literature on the subject
3. Extrapolate on the potential contribution of eosinophilic esophagitis to AC.

Abstract

Objective: report on airway endoscopic findings and gastrointestinal and atopic conditions in a large consecutive series of atypical croup (AC)

Methods: A retrospective cross sectional study in a tertiary referral centre. Prospective surgical database was searched for children who underwent full airway endoscopy to investigate AC. Demographics, secondary diagnoses (particularly large airway lesions, esophagitis, atopy), and rate of positive findings were documented.

Results: 86 patients were identified over a period of 8 years (66 boys, mean age 5.33 ± 3.64 years, range 12 days to 14.97 years). 30 large airway abnormalities were demonstrated (10 subglottic stenosis, 3 subglottic hemangiomas, 7 laryngeal clefts, 4 tracheomalacia, 3 laryngomalacia, 2 laryngeal paralysis, 1 supernumerary tracheal bronchus). 34 children had associated sleep disordered breathing. 19 patients had GERD, and 6 had eosinophilic esophagitis (all diagnosed in the last 5 years). Only 3 of the latter group had co-existing large airway abnormality (all subglottic stenosis). 9 patients were asthmatic, 2 had food allergies, and 7 had history of premature birth. 2 patients had herpes simplex laryngitis.

Conclusion: One third of airway endoscopies demonstrated large airway lesions explaining the AC. When eosinophilic esophagitis was sought after, it was confirmed in nearly 1:10 patients. The findings bolster the case for airway endoscopy coupled with allergy, and gastrointestinal investigations.

13:37-13:44

Success of Supraglottoplasty for Severe Laryngomalacia - E. Hwang, J.P. Vaccani, J. Chung, Ottawa, ON

Learning Objectives

1. During this presentation, the audience will learn about the outcomes of supraglottoplasty performed for severe laryngomalacia in a case series from a pediatric university teaching hospital.
2. By the end of this presentation, the audience will understand which factors can potentially account for the resolution or persistence of symptoms of laryngomalacia post-supraglottoplasty.

Abstract

Objectives: To assess the outcomes of supraglottoplasty performed for severe laryngomalacia according to gender, age, and initial symptoms that prompted surgery.

Methods: Retrospective chart review of children who underwent supraglottoplasty for severe laryngomalacia between 2001 and 2010 at a pediatric university teaching hospital. Outcome measures: resolution vs. persistence of laryngomalacia symptoms and need for revision supraglottoplasty.

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Results: So far our case series includes 14 patients. 50% of patients in both the female (3/6) and the male (4/8) groups had resolution of laryngomalacia. Persistent symptoms and revision surgery were more commonly found in patients with supraglottoplasty after 100 days of life, compared to those who had had it before in the first 3 months of life (6/7, 85.7% vs. 1/7, 14.3%; $p = 0.03$). No single symptom or group of symptoms was associated with refractory symptoms post-supraglottoplasty.

Conclusions: Need for revision surgery and/or presence of residual laryngomalacia symptoms after supraglottoplasty were more frequent in patients who had undergone the latter at a later age. This warrants very close monitoring of laryngomalacia with regards to disease progression when diagnosed in early infancy in order to proceed with a supraglottoplasty sooner than later and thus, optimize the success of this intervention.

13:44-13:51 **An Objective Acoustic Evaluation of Vocal Characteristics in Pediatric Vocal Cord Paralysis** – H. A. Alsaffar, A. Dzioba, P. C. Doyle, M. Husein, London, ON

Abstract

Introduction: Identification of vocal cord paralysis (VCP) in pediatrics is challenging. There is often little or no cooperation and the child is occasionally upset during nasopharyngoscopy. Acoustic analysis of laryngeal pathology has been widely used, yet such data have been gathered mainly from adults. However, acoustic measures of the child's voice during crying or undifferentiated speech may be used diagnostically.

Objectives: To assess the feasibility of acoustic voice analysis in assessing paediatric VCP.

Method: Ten children with confirmed unilateral VCP and 10 age and sex-matched controls were recruited. Voice samples were collected in a clinical environment using a computer-based system; comprehensive objective acoustic analyses were compared between groups.

Results and Conclusion: Results provide initial data that can be used as a diagnostic tool for VCP in young children. These data offer the potential for a simple and non-invasive method of assessment that can complement standard clinical procedures with this challenging population.

13:51-13:58 DISCUSSION

13:58-14:05 **The Epidemiology of Choanal Atresia in Southwestern Ontario: A 20-Year Retrospective Chart Review** – J. Paradis, M. Husein, K. Bertens, London, ON

Learning Objectives

By the end of the presentation, those attending will be able to gain an overall appreciation for the epidemiology of choanal atresia and evaluate the most appropriate surgical approach when presented with a patient suffering from this condition within a pediatric Otolaryngology practice.

Abstract

Introduction: There is conflicting literature on choanal atresia, in particular, regarding female: male ratio, frequency of bilateral versus unilateral atresia, associated anomalies, and surgical approaches associated with lower restenosis rates.

Objective: The objective of this study is to evaluate the epidemiological data of patients presenting with choanal atresia between 1988 to May 2010 to the London Health Science Centre which serves as a catchment area of Southwestern Ontario.

Method: A retrospective chart review.

Statistics: Statistical analyses include primarily descriptive statistics and Chi-square test when appropriate.

Results: Twenty-seven patients were diagnosed with choanal atresia between February 1988 and May 2010 (20 females, 7 males). Eighteen patients had bilateral atresia and 9 had unilateral atresia. The mean gestational age was 38 weeks, and the mean maternal age was 29 years. Eight patients had an isolated choanal atresia. Among those with co-existing anomalies, 5 patients were associated with CHARGE syndrome. For initial surgical repair, the endonasal approach was used in 52% of cases, transnasal in 30%, and transpalatal in 18%. Thirteen patients required revision surgery, and 5 required a second revision surgery.

Conclusion: This is the first epidemiological study focusing on choanal atresia in Southwestern Ontario.

14:05-14:12 **Cohort Study of Repeat Adenoidectomy in Children** – M. Duval, J.P. Vaccani, J. Chung, Ottawa, ON

Learning Objectives

- Familiarize the audience with the concept of repeat adenoidectomy due to adenoid regrowth in children
- Learn about the risk factors for repeat adenoidectomy
- Identify children who are at increased risk of repeat adenoidectomy

Abstract

Purpose: Determine the rate and risk factors for repeat adenoidectomy in children.

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Methods: A retrospective cohort study of all children having undergone an adenoidectomy in a single centre from 1990-2010 was performed. Children with repeat adenoidectomy were identified from our institution's surgical cases database. Data on risk factors for repeat adenoidectomy was obtained from the patients' charts.

Results: 10948 cases of adenoidectomy were performed. 177 children underwent repeat adenoidectomy (1.6%) The average age at the time of procedure overall was 6.2 while in children with repeat adenoidectomy the average age at first adenoidectomy was 4.8 years old ($p < 0.01$). 6 children underwent 3 adenoidectomies. The most common indication for adenoidectomy overall were hypertrophy (66.6%) and ear disease (8.7%). In children with repeat adenoidectomy the most common indications for surgery were hypertrophy (58%), ear disease (14%) and obstructive sleep apnea (8%). Children undergoing adenoidectomy at or under the age of 2 years old had a significantly higher risk of repeat adenoidectomy ($OR = 2.57, p = 0.012$)

Conclusion: This represents the largest study on repeat adenoidectomy. Children undergoing repeat adenoidectomy are significantly younger than those requiring a single procedure. The indications for surgery were similar for both groups.

14:12-14:19 **Measuring Health Related Benefit Following Pediatric Tonsillectomy** – A. Eksteen, T. Uwiera, R. Uwiera, E. Eksteen, Edmonton, AB

Learning Objectives

1. By the end of this session the otolaryngologist will be able to describe ongoing controversies in pediatric tonsillectomy.
2. By the end of this session the otolaryngologist will be able to evaluate parent or caregiver reported post-operative quality of life in children following tonsillectomy for treatment of obstructive sleep apnea, recurrent tonsillitis or both.
3. By the end of this session the otolaryngologist will be able to consider the effect of tonsillectomy on the quality of life of the pediatric patient in relation to other surgical procedures.

Abstract

Purpose: Tonsillectomies are one of the most common pediatric surgical procedures despite debate regarding indications and effectiveness. Many studies investigated incidence of post-tonsillectomy pain and hemorrhage, but to date few evaluated patient/caregiver satisfaction. The objective of this study is to determine health related benefits following tonsillectomy or adenotonsillectomy for obstructive sleep apnea (OSA), recurrent tonsillitis (RT) or both.

Methods: The Glasgow Child Benefit Index (GCBI) questionnaire was mailed to patients <17 years who underwent tonsillectomy for OSA, RT, or both. A retrospective chart review of participants was completed.

Results: 75 of 320 surveys (23.2%) were returned. GCBI summary scores ranged from -14.58 to +100 (maximum benefit) with a mean of +44.11 and a standard deviation of 24.36. The health benefit persisted >18 months from surgery (+46.82). GCBI scores were similar for OSA (+43.71), RT (+42.84) or both (+48.13). GCBI scores exceed reported scores following other surgical procedures.

Conclusion: Pediatric patients and their caregivers are generally satisfied with the quality of life following tonsillectomy as reported by the GCBI score. Despite the risks and discomforts of tonsillectomy, the enhanced quality of life reported postoperatively supports the continued use of tonsillectomies for treatment of both OSA and RT.

14:19-14:26 DISCUSSION

14:26-14:33 **Isolated Sphenoid Disease in Children: A 10 Year Retrospective Review** – L. Elden, K. Kazahaya, L. Tom, Philadelphia, PA

Learning Objectives

1. By the end of this talk, experienced clinicians and those in training should appreciate the significance of isolated sphenoid disease.
2. They should understand these patients present with more subtle symptoms than those with infections/processes in other sinuses and that progressive or severe headache is the most prevalent presenting symptom.
3. They should also be aware that disease in this sinus is more likely to result in intracranial complications than that in other sinuses.

Abstract

Objective: To identify the nature of presentation of isolated sphenoid sinus disease in children.

Methods: Retrospective chart review of records obtained from a tertiary children's medical center.

Results: Seven patients (6-17 years old) were diagnosed with isolated sphenoid sinus disease. Headache was the most common symptom. Histories of sinusitis, congestion or allergies were rarely reported. Four patients presented with headaches that progressed over months. These children were referred to an otolaryngologist after computed tomography or magnetic resonance imaging of the brain revealed sphenoid sinus mucoceles. Each child improved after the mucocele was removed. In one patient, the mucocele spontaneously extruded prior to surgery, as determined by intraoperative imaging. Three patients presented with more severe headaches that progressed over weeks, and who later developed photophobia

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and neck pain. Imaging revealed sphenoid sinusitis with intracranial findings (epidural abscess and partial cavernous vein thrombosis in two patients and pituitary prolactinoma in the third patient, respectively). Each patient improved after neurosurgical and sinus drainage.

Conclusions: Isolated sphenoid sinus disease is rare in children. All of our patients presented with progressive, severe headaches and minimal sinus symptoms. Imaging studies were helpful in identifying the source of headache.

14:33-14:40 **Modifying Effect of the V371 Allele in the GJB2 Compound Heterozygous State and Associated risk for Hearing Loss Progression** – D. Randall, Calgary, AB, F. Kozak, M. Fandiño, S. Langlois, Vancouver, BC

Learning Objectives

By the end of this session, the resident/medical student will be able to describe the audiologic profile expected from truncating and non-truncating GJB2 mutations.

By the end of this session, the otolaryngologist will be able to evaluate the need for continued audiologic follow-up in patients with V371 mutations.

Abstract

Objectives: The diverse range of GJB2 mutations produce a wide array of sensorineural hearing loss phenotypes. A simplistic genotype-phenotype correlation can be inferred from whether a mutation imparts a truncated or non-truncated protein. The V371 mutation is the most prevalent GJB2 mutation among Southeast Asian populations yet limited scientific literature exists regarding its associated audiologic phenotype and predisposition to progressive hearing loss when in compound heterozygosity.

Methods: We searched the Molecular Genetics database at BC Women & Children's Hospital to identify patients possessing a V371 mutation in compound heterozygosity with another pathogenic mutation. Patient records were reviewed for audiologic phenotype and hearing loss progression.

Results: We identified 17 patients possessing the V371 allele in compound heterozygosity; 11 met criteria for inclusion. Compound heterozygotes express a phenotype intermediate between the predicted homozygous phenotypes, and the severity of hearing loss can be predicted based on the second mutation's truncation status. Although no statistically significant mean progression of hearing loss occurred in our data set, 56% of compound heterozygotes showed progressive hearing loss and one patient required cochlear implantation.

Conclusion: A genotype-phenotype correlation exists for patients possessing the V371 mutation, however genotype provides no predictive value for static or progressive hearing loss.

14:40-14:47 **A Systematic Review of Hearing Loss Progression Among GJB2-associated Autosomal Recessive Hearing Loss** – D. Randall, Calgary, AB, J. Brookes, Edmonton, AB

Learning Objectives

- By the end of this session, the resident/medical student will be able to list the most common GJB2 mutations and their role in causing sensorineural hearing loss.
- By the end of this session, the resident will understand the molecular biology and audiologic consequences of truncating versus non-truncating mutations.
- By the end of this session, the otolaryngologist will be able to evaluate the need for regular audiologic follow-up in patients with GJB2 mutations.

Abstract

Objectives: The GJB2 gene (Connexin 26) is responsible for approximately 50% of all autosomal recessive hearing loss, with variable audiologic phenotypes depending on the specific mutations observed. Conventional knowledge states GJB2 mutations produce a sensorineural hearing loss that remains stable over time, however recent literature suggests patients with these mutations demonstrate progressive hearing loss.

Methods: A systematic review of medical literature and relevant academic conferences was conducted to determine whether patients show progressive worsening of audiologic phenotype over time.

Results: A total of 33 publications met inclusion criteria. Variability in outcome measures and parameters limit composite analysis of prior studies. The likelihood of progression over time is correlated with residual function of the resultant protein, with patients possessing two copies of an allele producing a truncated protein product progressing more commonly than those with one or two copies of a non-truncating allele. No single allele is associated with progression in 100% of cases. Additional factors beyond genotype may explain discrepancies between progressors and non-progressors with identical genotypes.

Conclusion: The natural history of GJB2 audiologic phenotype is associated with progressive hearing loss in substantial portions of patient populations. Individual genotypes are less predictive of progression risk than protein truncation status.

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14:54-15:01 **Evaluating Auditory Neuropathy Spectrum Disorder: The McMaster University Experience** – S. Nayan, D. Reid, C. Peddle, Hamilton, ON

Learning Objectives

1. To review and summarize the current literature on ANSD.

2. To understand the diagnostic criteria for ANSD.
3. To understand the associated risk factors with ANSD.
4. To identify the treatment options that are available to benefit patients with ANSD and to emphasize the importance of early intervention.
5. To highlight the importance of infant hearing programs which allow for diagnosis of patients with ANSD at an early age.

Abstract

Objectives: To evaluate the diagnosis, associated risk factors and treatment options for patients with Auditory neuropathy spectrum disorder (ANSD) at the Hamilton Health Sciences and review the current literature.

Methods: The McMaster University/Hamilton Health Sciences Research Ethics Board approved the retrospective chart review. Patients identified with ANSD were reviewed between the years of 1989-2009. All patients met the audiological criteria for ANSD: 1. Absent or severely abnormal auditory brainstem response; 2. Present cochlear microphonics; 3. Present otoacoustic emissions.

Results: Twenty-two patients were identified with the diagnosis of ANSD (18 via Infant Hearing Program (IHP) and 4 non-IHP). The most prevalent risk factor was prematurity (n=18). Four patients had mitochondrial disorders and four had family history of hearing loss. No patients had identifiable abnormality on either MR head or CT head. Seventeen patients received benefit from speech language pathology and eleven from hearing aids. Six patients were assessed for cochlear implants with only one receiving an implantation but did not benefit from it.

Conclusion: This is the first Canadian study evaluating a cohort of patients with ANSD. The study helps to better understand the diagnosis, associated perinatal risk factors and treatment options available for this complex disorder.

15:01-15:08

A Randomized Double-blind Controlled Trial of Phosphorylcholine-coated Tympanostomy Tube versus Standard Tympanostomy Tube in Children with Recurrent Acute and Chronic Otitis Media – P. Hong, N. Smith, L. Johnson, G. Corsten, Halifax, NS

Learning Objectives

- 1) By the end of this session the audience members will be able to consider which type of tympanostomy tube (phosphorylcholine-coated or non-coated) will be most beneficial to their patients.
- 2) By the end of this session the audience members will be able to discuss and evaluate issues pertaining to using different types of tympanostomy tubes (eg different material compositions, different coatings, and biofilms).

Abstract

Objective: To compare the postoperative complication rates of phosphorylcholine-coated fluoroplastic tympanostomy tube versus uncoated fluoroplastic tympanostomy tube.

Methods: A prospective randomized double-blind controlled trial in children with recurrent acute otitis media and chronic otitis media with effusion; 240 children were randomized to receive a phosphorylcholine-coated tube in one ear and an uncoated tube in the other. Postoperatively, patients were assessed at 2 weeks and 4, 8, 12, 18, and 24 months to ascertain the incidence of otorrhea, tube lumen blockage, and early extrusion.

Results: Out of 240 children, 5 withdrew and 16 were lost to early follow-up. The mean age was 43.8 months. There were no statistically significant differences in the incidence of postoperative otorrhea, tube blockage, and extrusion.

Conclusion: Phosphorylcholine-coated fluoroplastic ventilation tubes do not offer any advantages over uncoated standard fluoroplastic tympanostomy tubes.

15:08-15:15

Factors Influencing the Effectiveness of Behavioural Therapy for Drooling in Children – S. Massoud, A. Sénécal, S. Daniel, Montreal, QC

Learning Objectives

1. Affective, Problem Solving: By the end of the presentation, medical students, otolaryngologists and occupational therapists will be able to consider the families most likely to be able to execute the program.
2. Psychomotor, Application: By the end of the presentation, otolaryngologists and occupational therapists will be able to carry out the program with their patients/clients.
3. Cognitive, Application: By the end of the presentation, medical students, otolaryngologists and occupational therapists will be able to interpret the effectiveness of the behaviour modification program.

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Abstract

Purpose: To determine the factors influencing the effectiveness of a behaviour modification program in treating drooling secondary to neurological deficits in children.

Methods: Patients were given a CD that presented sounds to cue swallowing. The program was used with varying frequencies and was discontinued at the parents' discretion. Data was obtained from parents of 23 children.

Results: Group 1: Frequency of 2-4 times/week, average impact score of 1.8, success rate of 67%, and mean duration of 12.5 months.

Group 2: Frequency of 4-6 times/week, average impact score of 0.7, success rate of 29%, and mean duration of 5.3 months.

Group 3: Frequency of once/day, average impact score of 1.8, success rate of 56%, and mean duration of 14 months.

Conclusion: Duration of use has a significant impact on the effectiveness of this program; however frequency of use does not. Groups 1&3 had equivalently high success rates and impact scores, while group 2 rated low on both. This is likely because groups 1&3 had an average duration of over 12 months, while group 2 had an average duration of less than 6 months.

15:15-15:30 DISCUSSION

15:30-16:00 **COFFEE**

16:00-17:00 **ANNUAL BUSINESS MEETING** (*Lecture Theatre*)

16:00-17:00 WORKSHOP# 19 (*For Residents and Fellows*)

ENT Office Set-up, Effective Office Functioning and Link to Medical Education and the Developing World – M.C. Fabian, Vancouver, BC

Learning Objectives

1. The participant will review practical aspects of office set-up.
2. Basic principles for effectively running an ENT office will be shared.
3. The attendees will become more familiar with ways to incorporate medical education within the office environment, and other initiatives such as global health.
4. With the help of facilitation, and group input, there will be some practical take home points.

Abstract

Introduction/Objectives: Embarking on a career in medicine, and completing a residency, and fellowship, in Otolaryngology/Head and Neck Surgery, is only the beginning of the long path ahead. An office setting is a key component of most otolaryngology practices. Residency and fellowship training does not always cover all the information which would be helpful when setting up, and running, an ENT office. In addition, incorporating medical education and social accountability initiatives within the office environment can be challenging. This workshop will focus on the more practical aspects of office set-up, and will facilitate audience participation and consensus building. This workshop will also include strategies on effective ways to incorporate medical education in the office setting, while considering other factors such as global health.

Instructional Methods: PowerPoint slides will be utilized. Relevant documents will be distributed during the workshop, e.g. checklist development. Audience participation will be a fundamental aspect of this workshop. iClickers will not be available for this workshop.

Results and Conclusions: At the end of the workshop, relevant aspects of ENT office-up set-up, and functioning, would have been covered. As a result of the consensus building techniques, some key pointers for ENT office set-up and functioning will be established. Besides practical take home points, participants will also have an understanding of the diversity of medical education and social accountability initiatives within the office setting.

17:00-18:00 WORKSHOP #22

Lessons from Our Eustachian Tube Clinic – M. Bance, D. Kirkpatrick, Halifax, NS

Learning Objectives

By the end of this session, the practicing general otolaryngologist, otologist or rhinologist, will be able to evaluate the role of the eustachian tube in ear disorders, particularly patulous eustachian tube, appreciate methods of eustachian tube assessment, and appreciate various eustachian tube treatment methods, when seeing a patient with symptoms of patulous eustachian tube, or negative middle ear pressure from suppressed patulous eustachian tube.

Abstract

In this session we will examine

1. Symptoms of patulous eustachian tube, and differential diagnosis.
2. Suppressed patulous eustachian tube.

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3. Examination findings in eustachian tube disorders.
4. Common and experimental tests we can use to diagnose patulous and other eustachian tube dysfunction.
5. Treatment methods for patulous eustachian tube disorders.

This is a review of our experience from our combined rhinology/otology Eustachian tube disorders clinic that we have run at Capital Health in Halifax for the last 4 years, and our various diagnostic and treatment insights over that time period.

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