HEAD AND NECK SURGERY PAPER PRESENTATIONS

Head & Neck Incidentalomas on PET Scan; Ignore or Investigate

LEARNING OBJECTIVES
By the end of this session the resident in the training program will be able to evaluate the possibility of Whole-body CT/PET to detect a new unexpected primary malignant tumours when followed the inclusion criteria in high risk patients.

ABSTRACT
BACKGROUND AND OBJECTIVE: Incidental head & neck abnormalities are increasingly detected with 18F-fluorodeoxyglucose positron emission tomogram (PET). Incidental thyroid lesions on PET are described in many studies, however, no reports have definitively identified incidental findings in multiple H&N sites. The aim of this study is to identify the incidence and significance of head and neck incidentalomas on PET Scan.

DESIGN AND METHODS: This prospective study reviewed head and neck incidentaloma cases from whole-body18F-FDG PET/CT scans based on specific inclusion criteria from March 2006 to October 2009. The patients had been scanned for known or suspected malignant lesions in non head and neck sites. 31 cases revealed possible metastatic or new primary lesions in the head & neck.

RESULTS: 5 out of 31 cases (16.13%) discovered true malignancies in the incidentaloma lesion (3 thyroid, 1 parotid and 1 cervical lymph nodes) and all were new primary malignancies. 4 out of the 5 (80%) demonstrated high SUV.

CONCLUSION: Whole-body PET/CT detected new, unexpected 18F-FDG–avid primary malignant tumours in 16% of patients. High SUV strongly suggests the presence of malignancy. H&N incidentalomas merit consultation & exam. A minority will represent true malignancy.

Treatment of Upper Aerodigestive Tract Carcinoma with Transoral CO2 Laser Microsurgery - The Winnipeg Experience
- F. Bammkeke, C. Myers, P. Kerr, D. Sutherland, N. Viallet, WINNIPEG, MB

LEARNING OBJECTIVES
At the end of this session, the participant will:
- have a better understanding of the oncologic effectiveness of CO2 laser microsurgery in a variety of upper aerodigestive tract sites.
- have a better understanding of the expected functional outcomes of CO2 laser microsurgery.

ABSTRACT
OBJECTIVE: To summarize the CancerCare Manitoba experience in using transoral CO2 laser microsurgery as treatment for upper aerodigestive tract carcinoma.

STUDY DESIGN: Retrospective, population based consecutive series

METHODS: The registry of CancerCare MB was searched for all cases of upper aerodigestive tract carcinoma treated with CO2 laser microsurgery between 2003-2008. Charts were reviewed to determine oncologic outcome. Patients with laryngeal carcinoma participated in our comprehensive, prospective functional outcome monitoring program. These patients had functional results collected pretreatment, and at 3, 6, 12, 24, and 36 months post treatment.

RESULTS: 100 consecutive patients underwent transoral laser microsurgery for laryngeal carcinoma (N=50), or oral/oropharyngeal carcinoma (N=50). Survival and local control rates were comparable to traditional treatment modalities in each anatomic site. Our functional outcome results indicate that, for early glottic carcinoma, there is a trend toward better voice quality after radiotherapy relative to CO2 laser, but the level of patient satisfaction is high in both groups. Reduced voice quality in the laser group is offset by a trend toward better laryngectomy free survival.

CONCLUSIONS: Laser microsurgery has been an effective addition to the treatment armamentarium when treating carcinoma in a variety of upper aerodigestive tract sites.
**In Vivo Immediate Visualization of the Cytological Structure on Suspected Laryngeal and Oropharyngeal Lesions with Contact Endoscopy**  
- M. Ceron, K. Fung, B. Wehrli, J. Franklin, J. Yoo, LONDON, ON

**LEARNING OBJECTIVES**

1. By the end of this session the participants will be able to evaluate the diagnostic potential and limitations of Contact Endoscopy on benign and malignant lesions of oral cavity, pharynx and larynx when presented with evidence from the literature and results from our study.

2. By the end of this session the participants will be able to establish a systematic comparison between Contact Endoscopy and the traditional histopathological analysis when presented with a systematic review of related papers in journals.

3. By the end of this session the participants will consider the clinical applicability of this new diagnostic tool to their personal practice as described in the literature.

**ABSTRACT**

**BACKGROUND:** Contact endoscopy (CE) is an emerging technology that enables real-time dynamic in vivo microscopic visualization of tissue.

**OBJECTIVES:** To evaluate the diagnostic potential, accuracy and limitations of CE in benign and malignant lesions of the oral cavity, pharynx and larynx.

**Methods:** Patients with lesions of the oral cavity, pharynx and larynx will be enrolled in this pilot study. Patients with oral lesions will undergo CE visualization. The contralateral normal side will serve as a control. A biopsy will be obtained for histopathological analysis. Patients with pharyngeal and laryngeal lesions will undergo suspension microlaryngoscopy with CE visualization and histopathological analysis. Observation of intracellular patterns InVivo and estimation of blood vessels changes will be performed. Findings obtained with CE and histopathology will be compared.

**RESULTS:** This is an ongoing trial therefore results are pending.

**CONCLUSIONS:** We hypothesize that CE is a promising technology that may play a role in the early detection and diagnosis of head and neck cancer.

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**Prevalence and Association with Outcome of p16 and EGFR in Surgically Treated Oral Cavity and Oropharyngeal Cancer**  
- S. Chandarana, D. Chepeha, J. Lee, E. Chanowski, B. Kumar, A. Sacco, C. Bradford, G. Wolf, ANN ARBOR, MI

**LEARNING OBJECTIVES**

1. By the end of this session, the listener will be able to describe the prevalence of 2 biomarkers in oral cavity and oropharyngeal 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 a tissue microarray in identifying markers of tumor expression.

**ABSTRACT**

**OBJECTIVE:** To determine the significance of biomarkers (p16, EGFR) in a prospective cohort of surgically treated patients with oral cavity (OC) and oropharyngeal (OP) squamous cell carcinoma (SCC).

**PATIENTS AND METHODS:** Biopsies of previously untreated patients (49 OC and 36 OP) were scored for expression of p16 and EGFR. Biomarkers were assessed for prevalence and association with clinical covariates, overall survival (OS), disease-specific survival (DSS) and time to recurrence (TTR).

**RESULTS:** p16 was expressed in 12% and 56% of OC and OP patients respectively. EGFR was expressed in 88% and 86% of OC and OP patients respectively. No association between biomarker and outcome was detected in the OC group. In the OP group, p16 expression was associated with improved OS, DSS, and TTR (p < .01, < .01, < .01). EGFR expression was associated with smoking status (p = .02), and inversely associated with OS, DSS and TTR (p = .01, < .01, < .01).
CONCLUSIONS: Within the OP group, high p16 and low EGFR were associated with improved outcome, suggesting a role for these biomarkers in surgically treated patients. The prevalence of p16 was lower in the OC group, resulting in a sample too small to power survival analysis.

**Objective Measures of Neck Fibrosis: Variability in Amongst Different Treatment Modalities with Quality of Life Correlates.**
- C. Chin, J. Franklin, B. Turner, K. Fung, J. Yoo, D. Philip, LONDON, ON

**LEARNING OBJECTIVES**
1. To understand the morbidity associated with neck fibrosis
2. To know the utility of the cutometer in the objective measure of neck fibrosis
3. To associate neck fibrosis with quality of life
4. To acknowledge the heterogeneous response to cancer treatment

**ABSTRACT**
**BACKGROUND:** Neck fibrosis is a major side effect of head and neck cancer treatment. Until recently, there was no objective measure of fibrosis. The authors have validated a device to quantify fibrosis. The application of this measurement will allow for the assessment of fibrosis as it relates to the modality of cancer treatment. This is the first large study utilizing this recently validated tool.

**METHODS:** Retrospective analysis of consecutive head and neck cancer patients. Patients underwent measurements utilizing the validated cutometer as well as quality of life assessment by means of questionnaire. Bilateral assessments were taken to allow for patients with unilateral treatment to serve as their own internal controls.

**RESULTS:** 200 patients (400 necks) were recruited. The extent of fibrosis was higher in patients with combined modality treatment. This was mirrored in the quality of life assessment. There existed gender, racial and habitus differences in the extent of fibrosis experienced by patients undergoing similar treatments.

**CONCLUSIONS:** This study confirms the heterogeneous response to treatment for head and neck cancer and sheds light on some predictive factors in neck fibrosis.

**The Effect of Oncologic Head and Neck Surgery on Vascular Progenitor Cell Recruitment**
- H. Javidnia, M. Corsten, D. Allan, L. Eapen, OTTAWA, ON

**LEARNING OBJECTIVES**
By the end of this session the audience will have knowledge of the effects of surgery on circulating levels of vascular progenitor cells.

**ABSTRACT**
**OBJECTIVES:** Vascular progenitor cells (VPCs) are blood-derived angiogenic precursors and are implicated in repair of ischemic tissue damage through development of new capillary networks (neovascularization). The purpose of this study was to determine the effect of surgery on circulating VPC levels and angiogenic cytokine responses.

**METHODS:** Study subjects were patients requiring surgery for oral cancer. VPCs were measured by plating mononuclear cells isolated from peripheral blood in angiogenic culture conditions and enumerating VPC cell clusters according to previously published methods. VPCs were enumerated pre-operatively and on their 2nd, 7th, and 14th day post-operatively. Plasma samples were also stored for angiogenic cytokine analysis.

**RESULTS:** Levels of circulating VPCs varied significantly prior to surgery (0 – 56 /ml). Although most patients demonstrated stable or increased VPC levels following surgery, the degree and rate of VPC mobilization was highly variable. Correlation with wound healing, vascular graft integrity, positive surgical margins, and tumor recurrence will be studied. Most patients exhibited VPC levels at or below baseline levels by day 14 after surgery.

**CONCLUSION:** Surgical trauma is associated with a general trend toward increased mobilization of vascular progenitors although the response appears highly variable and an association with post-operative healing and cancer progression is uncertain.
Can Pathological Differentiation Predict N-Status in Head and Neck Squamous Cell Carcinoma?
- M. Klein, J. Dort, W. Matthews, CALGARY, AB

LEARNING OBJECTIVES
After observing this presentation, listeners should:
- Have a better understanding of how the degree of differentiation, as reported by the pathologist, correlates with an important clinical outcome, lymph node status.
- Understand that the degree of differentiation in head and neck squamous cell carcinoma may be a prognostic indicator, however it is not yet included in any staging system.
- Be able to better recognize that gaps in pathology reporting exist, and specifically that differentiation status should be consistently reported.
- Understand that accurate reporting of differentiation status may help to optimize the clinical decision making process in centers where advanced molecular analysis is not available or cost-prohibitive.

ABSTRACT
OBJECTIVES: 1. To discover the correlation between pathological differentiation at surgery and N-stage in head and neck squamous cell carcinoma (HNSCC) treated initially with excision and neck dissection (ND). 2. To determine the percentage of pathology reports that include differentiation status.

METHODS: This is a retrospective review of 162 patients treated with surgical resection and ND for HNSCC from February 1995 to March 2006 at one Calgary hospital. Patients with previous cancer were excluded from the study. The correlation between pathological differentiation in the surgical specimen and pathological N-stage was determined by the Chi squared test and Logistical regression.

RESULTS: Only 1 out of 19 patients with well-differentiated HNSCC were pathologically N+ (5.26%). For patients with moderately differentiated cancer, 27 out of 51 were N+ (52.94%), and patients with poorly differentiated cancer, 6 out of 8 were pathologically N+ (75.00%). The correlation between nodal positivity and pathological N-status was determined to be statistically significant by the Chi squared test. Pathology reports did not contain differentiation status for 14% of patients.

CONCLUSION: The results suggest a correlation between pathological differentiation status and pathological nodal status in patients with HNSCC. They also demonstrate inconsistent reporting of differentiation status.

The Use of Fluorescent light (VELscope) In Detecting Malignant and Premalignant Lesions In The Oral Cavity: A Prospective Single Blind Study
- H. Marzouki, K. Kost, T. Vi Vu, P. Chauvin, J. Hanley, MONTREAL, QC

LEARNING OBJECTIVES
We will give a brief introduction about the VELscope technology and its application in detecting premalignant and malignant lesions in the head and neck. By the end, head and neck surgeons will have a better understanding of the application of the VELscope and its role in diagnosing malignant oral cavity lesions.

ABSTRACT
OBJECTIVES: To assess the usefulness of the VELscope in detecting malignant and premalignant oral cavity lesions, and to determine the value of the VELscope as a screening tool in detecting oral cavity lesions that may not be detected by routine oral cavity examination.

METHODS: All patients were examined by a single blinded examiner and suspicious lesions were marked, then the VELscope were used by a different applicator to examine the oral cavity, blindly without knowing the results of the regular oral cavity examination and sites of abnormal cells were marked on a separate sheet. Biopsies were taken from the suspicious ‘exam’ and ‘VELscope’ sites if they were different.

RESULTS: We will aim for 50 instances where a biopsy was indicated by one of the modalities but not the other.
So far we examined 23 patients, fifteen were found normal with both modalities. While, six were positive on the Velscope and normal on the regular exam, the biopsies for those patients showed inflammatory changes with no dysplasia in 4 of them (66.67%), 2 of them showed mild to moderate dysplasia (33.33%). 2 of the 23 patients were positive on both modalities, biopsies were performed for them, one showed squamous cell carcinoma, while the other showed moderate to severe dysplasia.

CONCLUSION: The VELscope, if found to be effective, can be used as a screening tool for premalignant lesions. However, it may be difficult to distinguish inflammatory changes from true dysplasia by the VELscope.
Assessing the Safety of FEES in the Head and Neck Cancer Population
- M.W. Deutschmann, A. McDonough, J. Dort, and T.W. Matthews, CALGARY, AB

ABSTRACT
OBJECTIVE: To determine the risks of adverse outcomes from dietary recommendations made from post-treatment Fibre-optic Endoscopic Evaluation of Swallowing (FEES) in Head and Neck Cancer patients.

METHODS: A retrospective study will involve 120 Head and Neck Cancer patients who underwent 195 post-treatment FEES examinations from January 1, 2005 to December 31, 2008. The results of the FEES exams determine the diet that is recommended. The primary outcomes will be the incidence of hospitalization and death related to oral intake, specifically aspiration pneumonia and airway obstruction, occurring within 1 year of the last examination. Significant weight loss (>5%) will also be analyzed to determine if the diet recommendations are appropriate.

RESULTS: 21 of patients underwent surgery, 10 had radiation, 58 had surgery and radiation, and 20 had radiation and chemotherapy. The results of these patients will be analyzed and implications discussed.

The Impact of Multifocal Pattern of Invasion on Patient Outcomes in Oral Squamous Cell Carcinoma
- M. McNeil, M. Bullock, R. Hart, J. Trites, S.M. Taylor, HALIFAX, NS

ABSTRACT
OBJECTIVES: Multifocal squamous cell carcinoma (MSCC) of the oral cavity is thought to be associated with poor patient outcomes. We sought to determine the frequency of MSCC and associated outcomes to determine if the current standard of treatment is sufficient.

METHODS: 70 consecutive patients undergoing hemiglossectomy or total glossectomy between January 2000 and August 2008 were identified. Worst Pattern of Invasion (WPOI), Histological Risk Assessment (HRA), local recurrence (LR) and mortality were determined.

RESULTS: WPOI suggesting multifocality (grade 5) was associated with higher LR and mortality (38%, 25%) when compared to WPOI 1-4 (15%, 15%). Further, High HRA was associated with higher LR and mortality (38%, 38%) compared to combined Low and Intermediate (5.3%, 0%).

CONCLUSIONS: The results suggest that MSCC correlates with both LR and mortality. These data may impact standard of care for oral cancer.

Do Contrast Swallow Examination for Patients Following Major Ablative Pharyngeal and Laryngeal Surgery Help to Predict Enteroctaneous Fistula? A Retrospective Clinico-radiological Evaluation
- R. Nassif, P. Gulland, E. Ho, D. Goldstein, TORONTO, ON

LEARNING OBJECTIVES
1. Present the evidence based data on the value of contrast swallow examination after major ablative laryngeal/pharyngeal surgery.
2. Examine our institute’s experience with contrast swallow studies.
3. Evaluate the different contrast material in the swallow studies.

ABSTRACT
Pharyngocutaneous fistula is a serious complication following any major ablative laryngeal or pharyngeal surgery. Contrast swallow studies have been used postoperatively over the last 2 decades to examine the mucosal integrity of the new surgically created swallowing conduit. Over the years, water contrast media have replaced the original barium sulphate in these studies due to presumed less morbidity with the accidental contrast aspiration. This would only allow detection of substantial anastomotic leakage without detailing the mucosal lining of the neopharynx. Previous studies in the literature of esophagectomy have shown barium sulphate with a favorable difference of 15-20% sensitivity over and above water contrast media alone in detecting early leakage after surgery. We are set to examine the rates of detection of radiological leak following all major ablative laryngeal and pharyngeal surgery and investigate their correlation to the final clinical outcome.

The other part of the study include a prospective comparative study between the two different radiological media in different forms (ie. Liquid, semi-solid, etc.) while investigating the same patient to evaluate any difference in sensitivity, specificity and predictive values. Detection of small leaks would potentially avoid premature start of oral feeding, and continuing assisted enteral feeding until healing is completed.
A Comparison of Radiation and Surgery for the Treatment of Early Glottic Carcinoma
- H. Osborn, K. Fung, A. Hu, J. Yoo, J. Franklin, A. Nichols, LONDON, ON

LEARNING OBJECTIVES
Attendees will develop a better understanding of the voice effects of different treatment modalities for early glottic carcinoma.

At the completion of this presentation, attendees will have an enhanced understanding of transoral laser microsurgery as a voice-preserving treatment modality.

ABSTRACT
OBJECTIVE: Both radiation therapy (RT) and transoral laser microsurgery (TLM) are accepted modalities for the treatment of early glottic squamous cell carcinoma (SCC). As both modalities are similarly efficacious, clinicians must consider a multitude of other factors when recommending a treatment strategy. One such factor is voice-related quality of life (V-RQOL). This investigation sought to characterize differences in self-reported voice outcomes in patients undergoing radiotherapy or TLM for the treatment of T1A glottic SCC.

METHODS: Individuals with T1A glottic SCC presenting to a tertiary care multidisciplinary head and neck oncology clinic were included in this prospective cohort study. All patients after 2005 were offered TLM or RT. A historical age and gender matched control group was treated exclusively with RT. The primary outcome measure was post-treatment V-RQOL. Secondary outcome measures included local control, failure analysis, and laryngectomy-free survival. Minimum follow-up was six months.

RESULTS: Pending.

CONCLUSION: Radiation therapy and transoral laser microsurgery are established treatments for the management of T1A glottic SCC. The results of this investigation hope to contribute to the growing literature which supports the use of transoral laser microsurgery as a voice-preserving treatment modality.

Management of Radiation Induced Mucositis in Head and Neck Cancer Patients
- M. Shakeel, D. Hurman, A. Hussain, ABERDEEN, SCOTLAND

LEARNING OBJECTIVES
- To define radiation induced mucosits (RIM), discuss its underlying pathophysiology, elaborate the symptoms and signs caused by RIM and to learn about the role of any investigations in this condition.
- To explore any patients’ factors influencing the incidence and severity of RIM.
- To identify the various treatment options used for RIM in our centre and to find out the best evidence based management of RIM.

ABSTRACT
OBJECTIVES: To investigate the incidence, symptomatology, investigations and treatment of radiation induced mucositis (RIM) in head and neck cancer patients.

METHODS: Retrospective chart review of patients attending our clinic (2006). Data were collected on demographics, diagnosis, investigations, treatment of primary malignancy, incidence, severity and treatment of RIM.

RESULTS: A total of 43 patients were identified (male 25, female 18, age range = 19 – 82y). Most common sites involved in malignancy were larynx, oropharynx, tongue base and nasopharynx. Fourteen patients had T4, while 12, 9 and 8 patients had T3, T2 and T1 disease respectively. The radiotherapy was given over 20-22 fractions (55-60Gy). Of the 43, 32 (75%) patients experienced RIM necessitating some treatment. Commonest symptoms were odynophagia, dysphagia and dysphonia. Fifty percent (16) required hospital admission where RIM was treated with analgesia, antibiotics, anti-fungals, steroids, and various mouth washes. Based on smoking status, the incidence of RIM was; current smokers 15/18 = 83%, ex-smokers 9/17 = 53%, non-smokers 8/8 = 100%.

CONCLUSIONS: There is a high incidence of RIM causing significant morbidity in our cohort. The unexpectedly high incidence of RIM in non-smokers needs further investigation. Universally agreed treatment of RIM remains to be determined.

Modified Midfacial Translocation
- M. Shakeel, A. Hussain, M. Kamel, ABERDEEN, SCOTLAND

LEARNING OBJECTIVES
- By the end of our presentation the audience would have been made familiar with modified mid facial translocation technique.
- The audience would have been able to recognise the rationale, principles, technique, avantages and disadvantages of our modified mid facial translocation technique.
The audience would have acquired enough knowledge of anatomy and technique that they may wish to incorporate the technique in their surgical repertoire.

**ABSTRACT**

**OBJECTIVES**: To describe our modified mid facial translocation (MMFT) technique for access to nasopharynx, anterior, central and lateral skull base tumours. To share our clinical experience of the utility and safety of this technique.

**METHODS**: Retrospective chart review. Along with demographics, other parameters studied were location, type of tumour and its extent, adequacy of exposure, partial or total resection of tumour, aesthetic outcome and complications.

**RESULTS**: A total of 48 patients underwent MMFT for nasopharyngeal, parapharyngeal, anterior, central and lateral skull base tumours at our institution over 10 years period, by the senior author (AH). In all cases the exposure deemed to be adequate. There were minimal complications. Aesthetic outcome was satisfactory.

**CONCLUSIONS**: MMFT is based on the fundamental principle of temporary craniofacial disassembly for access to the skull base. We have modified previously described techniques. Our two modifications offer adequate access and better aesthetic outcome. All incisions are placed through the aesthetic sub units of the nose with preservation of the lip and additional incision is made in the sub labial mucosa. This has enhanced the aesthetic outcome significantly. Preservation of mid facial soft tissue attachment to the underlying bones seem to enhance vascularity and minimize complications.

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**Are Patients With Head and Neck Cancer More Likely to Suffer From Obstructive Sleep Apnea?**

- R. Varshney, R. Payne, V. Forest, M. Black, M. Hier, A. Zeitouni, J. Rappaport, S. Frenkiel, MONTREAL, QC

**LEARNING OBJECTIVES**

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

1. To appreciate the incidence of obstructive sleep apnea in head and neck patients.
2. To evaluate which treatments are associated with a higher incidence of obstructive sleep apnea.

**ABSTRACT**

**INTRODUCTION**: Obstructive sleep apnea (OSA) is an underdiagnosed condition that leads to significant health problems. Previous studies have shown that head and neck cancer (HNC) patients with OSA have a higher incidence of cardiopulmonary complications following surgery.

**OBJECTIVE**: To screen patients for possible OSA in a general otolaryngology population, and more specifically in HNC patients, to compare the incidence of OSA in these groups.

**METHODS**: An Epworth Sleepiness Score (ESS), a validated tool to screen for OSA, was submitted to patients coming to general otolaryngology and HNC clinics. Clinicodemographic data, location and stage of the cancer as well as the point of treatment were collated.

**RESULTS**: 28 post-treatment HNC patients and 175 controls completed the ESS. The HNC group was composed of 16 women and 12 men (average age 60.7 +/- 16.6), whereas the control group was composed of 97 women and 78 men (average age 51.2 +/- 16.6). 46.4% patients in the HNC group and 27.4% in the control group screened positive (p=0.048).

**CONCLUSION**: Preliminary results indicate that patients with HNC have a higher incidence of excessive daytime sleepiness on ESS, a surrogate of OSA, when compared to patients in the general otolaryngology clinic.

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**Bcl-2 and EGFR Overexpression Predict Radiotherapy Failure in Early Glottic Carcinoma**

- F. Whelan, A. Nichols, J. Yoo, K. Fung, J. Franklin, B. Wehril, K. Kwan, H. Osborn, LONDON, ON

**LEARNING OBJECTIVES**

By the end of this paper presentation the conference delegate will have an understanding of the significance of biomarker expression in predicting radiation failure in glottic squamous cell carcinoma and how this may influence patient management.

**ABSTRACT**

**BACKGROUND**: BCL-2 is an anti-apoptotic protein previously reported to be overexpressed in radioresistant squamous cell carcinoma (SCC) of the larynx and oropharynx. Epidermal Growth Factor Receptor (EGFR) is a cell surface tyrosine kinase receptor. Its activation modulates cell proliferation, adhesion, migration, and angiogenesis. Overexpression has been reported to be a prognostic indicator in laryngeal cancer, and a marker for aggressive mucosal head and neck SCC. The aim of this study is to evaluate whether Bcl-2 and EGFR
expression are correlated with treatment failure in patients with early glottic squamous cell carcinoma (SCC) treated primarily with radiation.

METHODS: A retrospective chart review was performed to identify patients with T1 and T2 SCC of the glottis treated solely with radiation. Patient demographics, tumor staging, smoking and drinking history, and treatment outcomes were extracted. Archival paraffin embedded pretreatment tumor specimens were sectioned and immunostained for Bcl-2 and EGFR. Univariate and multivariate analysis was performed using the Cox proportional hazard model to identify predictors of treatment failure.

RESULTS: Final results are pending.

CONCLUSIONS: Bcl-2 and EGFR over expression correlated with radiation failure.

Intra-Operative Factors Associated with Adverse Outcomes in Head and Neck Cancer Patients

- B. Williams, R. Hart, M. Al-Gilani, S. M. Taylor, J. Trites, M. Bullock, HALIFAX, NS

LEARNING OBJECTIVES
- To appreciate intra-operative factors that are significantly associated with free flap outcome.
- To appreciate the intra-operative factors that are significantly associated with patient complications and disposition.

ABSTRACT
OBJECTIVES: To identify intra-operative factors that are correlated to negative postoperative outcomes. This will allow surgeons to 1) plan post-operative patient care more accurately, and 2) be aware of intra-operative factors that may be altered to improve patient outcomes.

METHODS: Eleven intra-operative factors and 13 outcomes relevant to free flap patients were identified. Data on these factors were collected retrospectively from the charts of all H&N patients who underwent free flap reconstruction at the QEII Health Science Centre in Halifax between January 2005 and December 2008 (N=120). Each intra-operative factor was compared to each outcome to determine significant associations.

RESULTS: Many intra-operative parameters studied were correlated with adverse outcomes. Intra-operative transfusion is significantly associated with post-operative complications (P=0.004), length of stay in hospital (P=0.036), and death within 30 days (P=0.023). Lowest heart rate is associated with flap fate (P=0.039). Lowest core temperature and time under general anesthetic were also significantly associated with various negative outcomes (p<0.05)

CONCLUSIONS: These results underscore the importance of maintaining heart rate, core temperature, and multiple other factors during the procedure. Making an effort to control these parameters could potentially have a great impact on patient outcomes.

Osteoradionecrosis of the Mandible: University of Toronto Experience

- K. Wong, K. Higgins, D. Enepekides, R. Gilbert, D. Goldstein, TORONTO, ON

LEARNING OBJECTIVES
1. Discuss the current pathophysiology of ORN
2. Discuss the current treatment options for ORN
3. Discuss the University of Toronto Experience in management of ORN

ABSTRACT
OBJECTIVES: Examine the management of advanced osteoradionecrosis of the mandible at the University of Toronto.

METHODS: A retrospective chart review was performed of all patients who underwent surgical treatment of osteoradionecrosis from 2000-2008. Patient demographics, disease specific information, along with prior radiation therapy history were collected.

RESULTS: A total of 9 patients were identified (8 males and 1 female). Primary site of initial disease included oral tongue (3), parotid gland (1), Tonsil (1), soft palate (1) and retromolar trigone (1). Initial treatment modalities for these patients included radiation therapy alone (3), Surgery + post-operative radiation therapy (2) and Surgery + chemoradiation therapy (3) and chemoradiation alone (1). Five patients underwent successful mandibulectomy with a osseocutaneous free flap, while the remaining 4 patients were treated with equestrectomy/saucerization and conversative treatment. None of the patients required re-operation after treatment.

CONCLUSIONS: Osteoradionecrosis is a difficult entity to treat. Advanced osteoradionecrosis can be treated successfully with mandibulectomy and a vascularized free flap.
Sinonasal Undifferentiated Carcinoma: Survival Outcomes and Systematic Review
- C. Xu, H. Seikaly, P. Dziegielewski, J. Harris, EDMONTON, AB

LEARNING OBJECTIVES
1) To present the Alberta experience in treating SNUC over the last 23 years
2) To determine survival rates of SNUC based on treatment modality
3) To combine the results of the Alberta experience with a systematic review of the literature to hopefully elucidate the optimal treatment for the disease.
4) To review patient characteristics, presentation, diagnosis, and treatment outcomes based on the systematic review.

ABSTRACT
BACKGROUND: Sinonasal undifferentiated carcinoma (SNUC) is a rare, aggressive neoplasm of the nasal cavity or paranasal sinuses. Clinical onset is often subtle resulting in late diagnoses and advanced disease staging. Most authors recommend aggressive therapy; however, survival rates are often low.

OBJECTIVES: The purpose of this study was to review survival outcomes based on treatment modalities over the last 23 years in Alberta. In addition to this, a systematic review of the literature was conducted to help elucidate the optimal treatment of SNUC.

METHODS: A retrospective review of all patients with SNUC in Alberta over the last 23 years was performed. Patients were grouped based on treatment modality and survival rates were calculated. A systematic review of the literature was performed to examine patient characteristics, presentation, diagnosis, treatment and survival.

RESULTS: 16 patients were treated for SNUC between 1986 and 2009 in Alberta. Survival rates were highest for patients receiving surgery, radiation and chemotherapy with a 2 and 5 year rates of 85% and 63% respectively. In addition to these patients, more than 80 others were identified in the literature. Survival rates were highest for triple modality treatment with similar percentages.

CONCLUSIONS: With the addition of radiation and chemotherapy, the survival of SNUC has greatly improved since its discovery in 1986.