



**Department of Otolaryngology -
Head and Neck Surgery**

THIRTY-SEVENTH ANNUAL
RESIDENTS' RESEARCH DAY

**Friday, May 6, 2011
Conron Hall, University College
The University of Western Ontario**

PLANNING COMMITTEE MEMBERS

Disclosure Form

I have/have not had in the past 2 years, a financial interest, arrangement or affiliation with one or more organizations that could be perceived as a direct/indirect conflict of interest in the content of the subject of this or any other program.

1. Duncan MacRae: None
2. Jason Franklin: None
3. Murad Husein: None
4. Brian Rotenberg: Ethicon Incorporated and Medtronic Canada.

CHAIRMAN – DR. MURAD HUSEIN

1:15 – 1:35 **PRESENTATION OF AWARDS**

- 1:35 – 1:50 **Dr. Hussain Alsaffar** Acoustic Analysis in Pediatric Vocal Cord Paralysis.
- 1:50 – 2:05 **Dr. Goran Jeremic** Revision Rates after Endoscopic Sinus Surgery: A Recurrence-Analysis.
- 2:05 – 2:20 **Dr. Shahin Nabi** Nasal Spray Adherence after Sinus Surgery: Problems and Predictors.
- 2:20 – 2:35 **Dr. Amanda Hu** Evaluation of Patient-Perceived Satisfaction with Photodynamic Therapy for Bowen Disease.
- 2:35 – 2:50 **Dr. Mohamed Mohamed** Prospective Analysis of Human Tissue Kallikerin in Salivary Gland.
- 2:50 – 3:05 **Dr. Leigh Sowerby** Incidence, Epidemiology, Bacteriology and Post-Discharge Course of Peritonsillar Abscesses in London, Ontario.
- 3:05 – 3:50 **Interactive Discussion – All Topics**
- 3:50 – 4:00 **Evaluation Form Completion**

THE ROLE OF PLATELET RICH PLASMA ON WOUND HEALING IN RADIAL FOREARM FREE TISSUE TRANSFER

Dr. Doug Angel

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 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 differences 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 (eg. function, strength), as well as studies using more refined outcome measures are necessary to fully define the effect of PRP on healing of area scars.

Supervisor: Dr. Kevin Fung

INTRATYMPANIC DEXAMETHASONE IN THE TREATMENT OF MÉNIÈRE'S DISEASE

Dr. Jason A. Beyea

OBJECTIVES:

1. To understand the effect of intratympanic (IT) dexamethasone on vertigo control in unilateral Ménière's disease.
2. To evaluate the role of IT dexamethasone in the management of Ménière's disease.
3. To determine the effect of IT dexamethasone on hearing in Ménière's disease.

METHODS:

Retrospective case series in a tertiary neurotology clinic. 46 consecutive patients with definite unilateral Ménière's disease who had failed medical management were studied for an average of 405 days. None had prior ablative treatment. IT dexamethasone was injected and repeated for unchanged/worsened symptoms. The main outcome was need for subsequent ablative therapy.

RESULTS:

The number of IT dexamethasone injections per patient ranged from 1 to 12. Survival analysis with the Kaplan-Meier method demonstrated that the predicted survival (patients not requiring ablative therapy in the form of IT gentamicin) at two years following initial treatment was 70%. Audiogram four-tone averages (0.5, 1, 2, and 3kHz) were not significantly altered between pre-treatment and post-treatment evaluations ($p=0.12$).

CONCLUSION:

Some Meniere's patients appear to have control of vertigo with IT dexamethasone, although this must be measured against the natural history of this disease. Hearing was overall unaltered. Our results support at best a modest benefit of IT dexamethasone. Large multi-center randomized controlled trials are needed to further evaluate this treatment modality.

Supervisors: Dr. Lorne Parnes, Dr. Sumit Agrawal

ENDOLYMPHATIC SAC SURGERY VERSUS INTRATYMPANIC GENTAMICIN FOR THE TREATMENT OF INTRACTABLE MÉNIÈRE'S DISEASE: A RETROSPECTIVE REVIEW WITH SURVEY

Dr. Josée Paradis

OBJECTIVES:

(1) To review a 10-year experience of endolymphatic sac surgery (ESS) and intratympanic Gentamicin (ITG) for intractable Meniere's disease (MD); and (2) to compare pre- and post-operative outcomes.

DESIGN:

Retrospective chart review and survey

SETTING:

Tertiary care centre

METHODS:

Patients treated with ESS or ITG between 1997-2007 were reviewed using the 1995 AAO-HNS Meniere's Disease Guidelines. A quality of life (QOL) questionnaire was mailed out using the Dillman Method.

MAIN OUTCOMES:

(1) 1995 AAO-HNS hearing stage, vertigo class, and functional level; and (2) A 40-item validated QOL questionnaire (Meniere's Disease Outcome Questionnaire).

STATISTICAL ANALYSES:

Chi-square, t-tests

RESULTS:

Sixty-seven patients were recruited (n = 30 ESS; n = 37 ITG). Preoperatively, the ITG group had poorer hearing stage (p = 0.03). There were no differences between groups on preoperative functional level and QOL measures.

Postoperatively, ESS patients reported more tinnitus (p = 0.003) and aural fullness (p = 0.01). There were no differences in post treatment vertigo class. Secondary treatment was required for 8 patients in the ESS compared to 1 in the ITG. Post treatment hearing remained unchanged for the ITG, and was overall decreased in the ESS group (p = 0.03).

Participants in the ITG reported better postoperative functional levels (p = 0.02), and higher global (p = 0.04), social (p = 0.001), and overall QOL scores (p = 0.03).

CONCLUSIONS:

ITG, compared to ESS, reveals better post treatment functional levels, and superior global, social, and overall QOL scores. Although statistical difference in vertigo class is not found, a significant clinical difference is observed.

Supervisor: Dr. Lorne Parnes

**THE SPHENOID SINUS SEPTATIONS:
UNPREDICTABLE ANATOMIC LANDMARKS IN ENDOSCOPIC
PITUITARY SURGERY**

Dr. Justin P Poirier

OBJECTIVES:

We sought to determine whether the presence of sphenoid sinus septations could be used as predictable landmarks to identify the internal carotid artery prominence.

METHODS:

Fifty-six preoperative, high-resolution computed tomography scans were identified between January 2007 and December 2009 on patients undergoing endoscopic transsphenoidal pituitary tumor resection. The number and termination locations of sphenoid sinus septations were noted and their relationship to the internal carotid artery prominence studied.

RESULTS:

In this series each sphenoid sinus contained a mean of 1.57 septations. We analyzed a total of 88 sphenoid sinus septations and found only 17% inserting at either ICA prominence.

CONCLUSION:

In our study the presence of sphenoid sinus septations could not be reliably used as a surgical landmark to predict the location of the internal carotid artery. Our paper stands in contrast to other literature on this topic.

Supervisor: Dr. Brian Rotenberg

ACOUSTIC ANALYSIS IN PEDIATRIC VOCAL CORD PARALYSIS

Dr. Hussain Alsaffar

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.

Supervisor: Dr. Murad Husein

NASAL POLYPOSIS RECURRENCE AFTER PRIMARY ENDOSCOPIC SINUS SURGERY: A SURVIVAL-ANALYSIS

Dr. Goran Jeremic

OBJECTIVES/HYPOTHESIS:

Chronic rhinosinusitis with nasal polyposis is an inflammatory condition that is often refractory to medical and surgical management especially in patients with asthma and aspirin intolerance. We investigated the recurrence rates of nasal polyps following polypectomy in patients with asthma and Samter's triad.

STUDY DESIGN:

Survival analysis.

METHODS:

Records were reviewed of 549 patients with nasal polyposis who underwent polypectomies for surgery dates, dates of recurrence, sinus involvement, polyp grade, mucin presence, pre- and post-operative anosmia and co-morbidities. Kaplan-Meier analyses were used to compare recurrence rates. Cox proportional hazard models were developed to assess disease and surgery recurrence factors.

RESULTS:

Patients with Samter's triad were significantly more likely to recur and recurred sooner than patients with asthma and control patients (Odds Ratio = 3.7 (95% CI 2.5-5.5), $p < 0.01$). Patients with Samter's triad were also more likely to undergo a second surgery following recurrence (Odds Ratio 2.7 (95% CI 1.5-3.2), $p < 0.01$). Samter's triad patients were more likely to have fungal mucin and post-operative anosmia. The presence of initial frontal sinus disease increased the likelihood of disease recurrence and revision surgery (Odds Ratio = 1.4 (95% CI 1.2-1.9), $p < 0.01$).

CONCLUSIONS:

Nasal polyposis following polypectomy recurs frequently, especially in patients with asthma and Samter's triad. These patients should be informed about the high likelihood of recurrence during clinical consultations as it may affect the decision to undergo sinus surgery.

Supervisor: Dr. Brian Rotenberg

NASAL SPRAY ADHERENCE AFTER SINUS SURGERY: PROBLEMS AND PREDICTORS

Dr. Shahin Nabi

OBJECTIVE:

To assess patient adherence to nasal spray regimens after endoscopic sinus surgery (ESS), and study factors that predict adherence.

METHODS:

A three-arm randomized and triple-blinded controlled trial was conducted at a tertiary-care academic hospital, studied via a prospective longitudinal survey, of 60 consecutive CRS patients managed with ESS and started on one of three postoperative nasal spray regimens. Structured telephone interviews were conducted after surgery over a 12-month period using a validated questionnaire that assessed both spray adherence and barriers to adherence. Patient demographics, time post-ESS, preoperative SNOT scores, Lund-MacKay scores, adherence risk factors, and polyp grades were used as covariates with logistic regression.

RESULTS:

Overall, 57.4% of patients were non-adherent. Logistic regression showed that preoperative SNOT scores ($p = .018$, 95% CI = 0.84-0.98), time post-ESS ($p = .016$, 95% CI = 1.02-1.22), and the presence of an adherence risk factor ($p = .03$, 95% CI = 1.18-26.99) significantly predicted whether or not a patient was adherent and correctly classified 70.4% of all patients. Age, gender, and nasal spray regimen did not predict adherence ($p > .05$).

CONCLUSION:

The majority of patients were non-adherent to post-ESS nasal sprays, irrespective of which nasal spray regimen they were on. Preoperative SNOT scores, time post-ESS, and the presence of an adherence risk factor predicted adherence. With this knowledge, otolaryngologists can selectively employ strategies to improve adherence in high-risk patients, and possibly improve ESS outcomes.

Supervisor: Dr. Brian Rotenberg

EVALUATION OF PATIENT- PERCEIVED SATISFACTION WITH PHOTODYNAMIC THERAPY FOR BOWEN DISEASE

Dr. Amanda Hu

OBJECTIVE:

To formally evaluate patient concerns and patient-perceived satisfaction with photodynamic therapy (PDT) using topical application of 5-aminolevulinic acid for Bowen disease (BD).

DESIGN:

Initial focus groups and mail out questionnaire.

SETTING:

Tertiary care hospital.

METHODS:

A novel 32-item self-reported patient satisfaction questionnaire was mailed out to all patients treated with PDT for BD from January 1, 2000, to March 31, 2008.

MAIN OUTCOME MEASURES:

A written questionnaire addressing side effects experienced, self-perceived effectiveness, and the personal and social consequences of PDT.

RESULTS:

One hundred thirty-two adults were treated with PDT for BD over this time period. Ninety-five patients (47% male, 53% female) completed the questionnaire. A majority (> 90%) indicated a very favourable impression of the effectiveness of PDT for BD and that side effects were mild. The most significant side effects were a burning sensation (21%) and crusting or scabbing (14%). Side effects were judged to be predictable. The process of treatment and overall time demands were judged by only 7% of respondents to be problematic. The most substantial limitations with PDT were social limitations secondary to treatment (26%), self-consciousness (28%), and skin appearance in the immediate posttreatment period (30%). Respondent reliability in response to questions was excellent.

CONCLUSIONS:

PDT is favourably received by those diagnosed with BD. PDT resulted in a high degree of perceived satisfaction for those patients with BD. Based on these data, PDT is supported as a viable method of treatment for BD.

Supervisor: Dr. Corey Moore

PROSPECTIVE ANALYSIS OF HUMAN TISSUE KALLIKERIN IN SALIVARY GLAND

Dr. Mohamed Mohamed

OBJECTIVE:

To analyze the expression of KLK10 in the salivary gland tumor

DESIGN:

A standard immunoperoxidase staining technique was used to semi-quantitatively assess immunohistochemical expression profile of KLK10 in normal salivary glands and salivary gland tumor.

RESULTS:

All salivary gland tumor and normal tissues demonstrated immunoreactivity to KLK10. Neither of malignant tumours showed a significant alteration in levels of KLK10 in comparison with its levels in normal salivary gland tissues, although Adenoid cystic carcinoma showed less KLK10. Pleomorphic adenoma significantly lower KLK10 levels than control tissues. KLK10 showed significantly higher in salivary glands tumours arising in males than those arising in females.

CONCLUSION:

The finding lower KLK10 levels in PA and ACC suggests the possible involvement of KLK10 in inhibiting the tumorigenesis of myoepithelial cells of PA and ACC. The higher expression of KLK10 in males warrants further investigation.

Supervisor: Dr. Kevin Fung

The Epidemiology, Antibiotic Resistance and Post-Discharge Course of Peritonsillar Abscesses – A Canadian Perspective

Dr. Leigh Sowerby

Introduction: Peritonsillar abscesses are the second most common reason for Emergency department (ED) consultation by an Otolaryngologist. Recent epidemiological data from the United States have demonstrated emerging resistance patterns; no similar studies have been conducted in Canada. There is also very little information in the literature regarding the post-discharge course of treated patients.

Objective: To detail the epidemiology, antibiotic resistance and post-discharge course of patients presenting with a peritonsillar abscess over a period of one year.

Study Design: A prospective observational study was conducted from February 2009 to January 2010 of all patients presenting to the ED in London, Ontario with an aspiration-positive peritonsillar abscess. Culture results and demographic data were collected. A follow-up telephone survey was conducted 2-3 weeks after abscess drainage. The ED database was searched to ensure complete capture of all events.

Results: A total of 60 patients were diagnosed with an abscess; 46 patients were enrolled. The average duration of symptoms was 6 days, with 51% already being treated with antibiotics prior to drainage. A mean of 4mL of pus was obtained and 15% of patients required admission. Clindamycin was prescribed to 69% of patients. *Streptococcus pyogenes* and *Streptococcus anginosus* were present in 56% of isolates and of those, 7/23 (32%) of specimens demonstrated resistance to clindamycin. Eight patients were treated with clindamycin and had a cultured pathogen that was resistant; yet only one of these patients had recurrence. Telephone follow-up was possible for 38 patients: 51% of patients reported a return to solid food within 2 days, and 75% reported no pain by 5 days. Pain medication was not required by day 3 for 53% of patients, while resolution of trismus took a week or longer for 51%. 5 patients had re-accumulation of pus requiring redrainage. The yearly incidence was estimated as 12 per 100,000.

Conclusions: Clindamycin resistance was identified in a third of *Streptococcus* isolates, which should be taken into account when prescribing post-drainage antibiotics. It appears that the simple act of drainage may be sufficient and that culturing all aspirates is unnecessary. Patients recover quickly from outpatient drainage, with less pain than expected, but trismus takes time to resolve.

Supervisors : Dr. Zafar Hussain, Dr. Murad Husein

DISTINGUISHED VISITING PROFESSOR

**Department of Otolaryngology -
Head and Neck Surgery**

DR. RALPH GILBERT

Professor

***Department of Otolaryngology –
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DISTINGUISHED ALUMNUS

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Sponsored by Med-El Canada

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AWARDS & PRIZES

SCIENTIFIC ACHIEVEMENT AWARD:

Presented for the most outstanding scientific achievement.

Charles A. Thompson Plaque

PETER CHESKI INNOVATIVE RESEARCH AWARD

Presented for the most innovative research.

THOMAS MARTIN GOLDEN THROAT AWARD

Presented for the most eloquent presentation including evaluation of audio-visual aids.

RESIDENT BOOK AWARDS

Presented to residents who did not receive one of the above awards.

SIMON KIRBY MOST CARING RESIDENT AWARD

Presented to the resident who demonstrates excellence in compassionate care.

UNDERGRADUATE TEACHING AWARD

Presented to the resident with the highest teaching evaluation.