

Abstracts

Podium: Pediatric OHNS

Tuesday, June 9, 2015 @ 13:00-14:30

Predictors of Success of Tonsillectomy and / or Adenoidectomy in Otherwise Healthy Children with Snoring / Sleep Disordered Breathing – A. Isaac, N. Alsufyani, M. Witmans, P. Major, H. El-Hakim, Edmonton, AB

Learning Objectives

1. Discuss the rationale for temporary tracheostomy at the time of head and neck cancer resection (HNC-R).
2. Describe the morbidity and complications associated with failed and delayed decannulation.
3. List the variables associated with failed and delayed decannulation in HNC-R patients.
4. Discuss strategies for modifying risk factors and counselling patients regarding risk of persistent tracheostomy after HNC-R.

Objective: To determine the variables that are predictive of failed and delayed decannulation in patients who underwent head and neck cancer resection (HNC-R) with tracheostomy. **Design:** Retrospective case-control study **Methods:** All patients who underwent HNC-R with immediate free tissue transfer reconstruction and tracheostomy who had failed or delayed decannulation between 2011 and June 2014 were included. Failed decannulation was defined as persistent tracheostomy at the time of discharge, or persistent tracheostomy at 60 days post-surgery. Delayed decannulation was defined as persistent tracheostomy at 10 days post-surgery. Controls were matched for age, sex, time of surgery, surgeon, and TNM stage. Odds ratios for risk of failed decannulation were calculated for each variable. Multivariable Cox Regression Analysis was used to determine predictors of days to decannulation. **Results:** 18 consecutive patients with failed decannulation and 41 patients with delayed decannulation were included, along with 59 matched controls. Total glossectomy (OR=56.3 [8.4-180.1]), total base of tongue resection (OR=32.0 [3.4-99.9]), anterolateral thigh flap reconstruction (OR=2.1 [1.3-9.6]), smoking at time of surgery (OR=4.2 [1.4-12.7]), and pack years (OR=1.06 [1.02-1.11]) were associated with failed decannulation. Cox Regression Analysis showed that total glossectomy (Exp(B)=7.1 [2.1-24.6]), and smoking status (Exp(B)=5.0 [1.7-14.1]) were independent predictors of days to decannulation. **Conclusions:** Patients with total glossectomy defects after HNC-R, and those that continue to smoke to the time of surgery are at increased risk for delayed and failed decannulation. Patients should be appropriately counseled about these risks, and effort should be made to address the modifiable risk factors.

Systematic Review of Respiratory Complications Following Pediatric Tonsillectomy – D. Leitao, J. Jones, B. Blakley, Winnipeg, MB

Learning Objectives

At the conclusion of this podium presentation, attendees will be able to:

1. Describe the range and median rates of respiratory complications in children undergoing tonsillectomy for sleep-disordered breathing and OSA.
2. Discuss the variability in studies evaluating respiratory complications in children undergoing tonsillectomy for sleep-disordered breathing and OSA.
3. Identify 3 limitations of performing a meta-analysis on studies assessing post-operative respiratory complications in pediatric tonsillectomy patients.

Introduction: There is a high degree of concern amongst perioperative teams regarding post-operative risks following pediatric adenotonsillectomy (T&A) for obstructive sleep apnea (OSA). Physicians and surgeons look to the medical literature for guidance on risk assessment for children with OSA and need for intensive post-operative monitoring. **Objective:** To determine the rate of respiratory complications in children admitted postoperatively following tonsillectomy/adenotonsillectomy for OSA. **Methods:** A systematic review of the literature was performed using the following inclusion criteria: children age <18 years, who have undergone tonsillectomy or adenotonsillectomy for obstructive breathing, and were electively admitted for at least one night post-operatively. **Results:** A systematic search of the literature produced nine studies that met our inclusion criteria. A total of 706 children undergoing T&A were included. In these studies, 140 patients were identified with respiratory complications. The rate of respiratory complications ranged amongst studies from 2% to 34%, with a median of **21%**. The rate amongst studies limited to abnormal sleep studies (27%) was different from those without sleep study data (5%). There was significant heterogeneity in the patient populations, and all studies included high numbers of patients with known risk factors for respiratory complications, regardless of sleep study or OSA diagnosis. **Conclusions:** The median rate of respiratory complications following pediatric tonsillectomy for obstructive breathing is 21%. However, the patient populations studied demonstrated significant comorbidities. There is a lack of well-designed studies looking specifically at respiratory complications in otherwise healthy children undergoing T&A.

Role of Sleep Endoscopy as a Diagnostic Tool for Upper Airway Obstruction in Children with Pierre Robin Sequence: Review of the Literature and Case Series – A. Fanous, P.-L. Beaudoin, Y. Lacroix, Montreal, QC

Learning Objectives

1. By the end of this presentation, the audience will have a better understanding of the role of sleep endoscopy in the management of the paediatric Pierre Robin Sequence airway.

Background: The role of sleep endoscopy in Pierre Robin Sequence (PRS) has not yet been explored. Given the complexity of the Pierre Robin Sequence airway, sleep endoscopy could theoretically serve as a safer alternative to diagnostic flexible bronchoscopy requiring general anesthesia. **Objective:** To determine the role of sleep endoscopy in the diagnostic evaluation of upper airway obstruction in children suffering from Pierre Robin Sequence. **Methods:** A retrospective case series analysis at a single institution was performed. Patients suffering from PRS with evidence of upper airway obstruction on standard polysomnography and without clinical evidence of significant tongue base obstruction having undergone a diagnostic sleep endoscopy procedure were included in the study. A thorough literature analysis on the role of sleep endoscopy in patients suffering from PRS was also performed. **Results:** 3 patients with PRS having undergone sleep endoscopy from October 2013 to November 2014 were identified. Ages ranged from 1 month to 2 years. All patients were male. The severity of obstructive apnea ranged from moderate to severe. Sleep endoscopy demonstrated various levels of obstruction. The children were subsequently treated by the appropriate intervention. Post-operative polysomnography results ranged from complete resolution of obstruction to excellent improvement. **Conclusion:** When faced with complex upper airway obstruction in the pediatric PRS population non responsive to non-invasive measures, sleep endoscopy is a valuable additional tool in the airway surgeon's armamentarium of diagnostic procedures in order to diagnose the correct level(s) of obstruction and plan the appropriate procedure.

Congenital Cytomegalovirus (cCMV) Infection in Province X: A Retrospective Analysis of Frequency of Diagnosis and Clinical Presentation – B. Sorichetti, F. Kozak, P. Tilley, M. Kraiden, J. Pauwels, S. Gantt, Vancouver, BC

Learning Objectives

1. Review of congenital cytomegalovirus.
2. Review of congenital cytomegalovirus and sensorineural hearing loss.
3. Increase awareness of congenital cytomegalovirus and therefore increase testing for better care.

Introduction: Congenital cytomegalovirus infection (cCMV) is a leading cause of childhood hearing loss and neurocognitive impairment. Antiviral treatment is safe and effective for symptomatic cCMV, which is estimated to occur in 5-10 per 10,000 live births. We evaluated the number and presentation of cCMV cases diagnosed clinically in a large Canadian province. **Methods:** Data was reviewed for all infants <3 weeks old tested by CMV culture or PCR at the provincial clinical virology laboratories between January 1, 2006 and June 30, 2014. Chart review was performed to characterize the clinical presentation of those infants diagnosed with cCMV. The rate and presentation of cCMV cases were compared to published epidemiologic studies. **Results:** During the study period, 1,293 newborns were tested for cCMV. Of these, 27 (2.1%) were positive, representing 7.3 cases of cCMV diagnosed per 100,000 live births in BC during the same time period. Medical records were available for review for 25 (92.6%) of the cases diagnosed. The majority had at >3 clinical findings consistent with cytomegalic inclusion disease. Seven infected infants died, and 9 of the remaining 18 patients had global developmental delay and sensorineural hearing loss. **Conclusion:** Approximately 10-fold fewer newborns were diagnosed with cCMV than the number of symptomatic cases expected in Province X, and those that were identified had markedly severe disease. Thus, even accounting for the possibility that some newborns may have been diagnosed elsewhere, these data suggest that systems are needed to better identify infants with cCMV who would benefit from antiviral therapy.

Chloral Hydrate Sedation for Auditory Brainstem Response Testing in Children: Safety and Efficacy – D. Valenzuela, D. Kumar, C. Labelle, F. Kozak, N. Chadha, Vancouver, BC

Background: Auditory Brainstem Response (ABR) test is used to evaluate hearing in children who cannot be tested using standard methods. The child must be asleep throughout the duration of the test. Since 2004, ABRs have been routinely conducted at BC Children's Hospital in an ambulatory care setting under sedation using chloral hydrate and monitored by a nurse. **Objectives:** The aim of this retrospective study was to assess the effectiveness and safety of nurse-led sedation with chloral hydrate for ABR testing at BC Children's Hospital. **Methodology:** ABR testing records were reviewed for children aged 6 months to 17 years from 2004 to 2012. We reviewed the dosage of drug used, condition of the child after chloral hydrate administration, adverse effects, audiological results, and the effectiveness of the sedative throughout the duration of the test. Frequency distributions were derived for adverse outcomes and audiological results. **Results:** 707 ABR with chloral hydrate sedation records encompassing 641 children were reviewed. The majority of sedated ABR's (79.4%) were completed without any incident. Significant events [apnea and/or bradycardia], minor complications [vomiting, hypoxemia, etc] and restlessness were noted in 4.1%, 7.9%, and 5.1% of the cases, respectively. In 96.5% of ABRs, chloral hydrate was successful in sedating adequately to answer the audiological question. **Conclusions:** We believe that the use of chloral hydrate in the presence of a sedation nurse is a safe and reliable method of performing ABR in infants and children. This may be of significant value to centres exploring alternatives to GA for ABR testing.

Recognizing Child Abuse in Otolaryngology: A Comprehensive Review of the Literature –
B. Sorichetti, J. Pauwels, Vancouver, BC, M. Fandiño, Bucaramanga, Colombia, F. Kozak,
Vancouver, BC

Learning Objectives

1. Review of child abuse and Otolaryngology.
2. Review of child abuse in general.
3. Heightened awareness of Munchausen syndrome by proxy.

Introduction: seventy-five percent of child abuse cases involve injuries to the head, and neck. **Methods:** A comprehensive review of the literature was performed for cases of child abuse that involved the specialty of otolaryngology. Utilizing the Mesh terms child abuse, otolaryngology, Munchausen syndrome by proxy, hypopharyngeal, and non-accidental injury as well as a review of references from papers obtained from the initial search, a total of 32 articles were found and reviewed in detail. **Results:** 35 cases of child abuse were identified from this review that dealt with involvement of an otolaryngologist. The majority of these cases were injuries sustained to the hypopharynx and larynx followed by otologic injuries. Other areas included the neck and nose. Munchausen syndrome by proxy involved 8 of the 35 cases. **Discussion:** The index of suspicion for child physical abuse must remain high for any unusual injury to the hypopharynx and ears in an infant or child. Otolaryngologists play can play an important role in recognizing symptoms caused by child abuse. The unique position of an otolaryngologist is their ability to provide successful medical intervention for these injuries and contribute to a positive future outcome for the child. Physicians who have contact with children must be familiar with the common signs of and risk factors for child abuse. A representative case and review of child abuse in Otolaryngology is presented.

Prevalence of Internet and Technology Use Among Families With Pediatric ENT Disorders – D. Leitao, J. Jones, A. Gooi, Winnipeg, MB

Learning Objectives

1. Describe the prevalence of technology use in a pediatric otolaryngology practice.
2. Identify areas for potential improvement in communication and access to care using technology and/or internet.
3. Discuss some limitations in using technology to communicate with patients.

Introduction: Recent studies have shown that 85% of Americans have a cellphone, of which 53% are smartphones. 31% have used their phones to access health related information. There are numerous health care “apps” that are directed towards students, health professionals, and patients. There has not, however, been a study looking at the prevalence of computer technology within a Canadian population. **Objectives:** 1) To determine the prevalence of Internet and technology use among new patients presenting to pediatric Otolaryngology clinics. 2) To determine if there is a role for using technology to improve communication and access to care for our patients. **Methods:** New patients presenting to one of two pediatric otolaryngology clinics were approached regarding the study. A paper survey was completed by the parents. Families were excluded from participation if the child was >16 years of age and/or if English was not the primary language of communication for the family. **Results:** To date, 55 surveys have been completed. Of these, 85% indicated owning a smartphone. Twenty-seven respondents (49%) had researched their child’s problem prior to presentation. 78% (43/55) indicated an interest in using texting as a method of communication with the clinic/physician. Thirty-one respondents (56%) have used videoconferencing in the past, though only 6 of them found it to be of high quality. **Conclusion:** Technology use is high among families presenting to our

pediatric ENT clinics. There is a great desire among our population to use additional technologies to improve communication and access to care.

HOW I DO IT

Intracatheter Low-Pressure Oxygenation During Balloon Dilation of Subglottic Stenosis –
D. Khalil, A. Weiss, J. Jones, D. Leitao, H. .Wong, H. Reimer, A. Gooi, Winnipeg, MB

Learning Objectives

By the end of this presentation the otolaryngology resident and/or attending will:

1. Have a clear understanding of the use and assembly of this inexpensive apparatus.
2. Appreciate the advantages offered by intracatheter low-pressure oxygenation in this specific patient population.
3. Be able to clearly communicate throughout this difficult procedure with their anesthesia colleagues to safely and effectively manage subglottic stenosis.

Objectives: To introduce a new, effective management strategy for the safe dilation of subglottic stenosis, involving the assembly of inexpensive, readily available materials. **Methods:** A case presentation and review of the literature showing the danger of tracheal occlusion for balloon dilation and the advent of a new anesthetic regimen and inexpensive device allowing for intracatheter oxygenation during balloon dilation of subglottic stenosis. **Results:** The widely used method of balloon dilation consisted of serial dilation performed under general anesthetic for approximately 30 seconds, or until the child's oxygen saturation fell below 92%. The advent of the dexmedetomidine regimen allowed for maintenance of spontaneous ventilation, negating the need for multiple re-intubations. The use of the intracatheter low-pressure oxygenation technique maintained oxygen saturation at 100% allowing the otolaryngologists to increase time of dilation and radial pressure to 2 minute intervals, increasing the efficacy and reducing the number of serial dilations needed per procedure. **Conclusions:** This management strategy for the dilation of subglottic stenosis involves the assembly of an inexpensive apparatus from readily available materials and we believe significantly increases the safety and efficacy of the procedure compared with the alternate management strategies.