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Abstracts

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DIAGNOSTIC FLEXIBLE VS RIGID BRONCHOSCOPY FOR THE ASSESSMENT OF TRACHEOMALACIA

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[Background] Tracheomalacia (TM) is a condition of structural weakness of the trachea with intrathoracic tracheal collapse resulting in symptoms of poor mucociliary clearance, recurrent infections and respiratory failure. Video bronchoscopy remains the diagnostic “Gold Standard.” However, no study has systematically differentiated the efficacy of flexible vs rigid bronchoscopy in diagnosing TM. Differentiating efficacy by modality is important both to correctly diagnose severity of TM in individual patients as well as for comparative studies.

[Objective/Study Outcome] This project (1) analyzes ratios of tracheal collapse and expansion in patients with TM, and (2) assesses the potential impact of rigid and flexible bronchoscopy in making the diagnosis of TM.

[Methodology] A total of 9 patients (5 males and 4 females) with TM underwent both rigid and flexible video bronchoscopy at Texas Children’s Hospital. All patients were breathing spontaneously. Images of the cross-sectional area of airway lumen were processed via ImageJ, and analyzed via Color Histogram Mode Technique (CHMT). T-tests via STATA v13.0 quantified differences in maximum airway collapse and expansion, ratios of maximum collapse-to-expansion, and ratios of maximum collapse-to-expansion (rigid-to-flexible). The two modalities of imaging were then compared.

[Results] The differences in maximum airway collapse ($p=0.0002$) and expansion ($p=0.0005$) were statistically significantly different. The ratios of maximum collapse-to-expansion ($p=0.6414$) and ratios of maximum collapse-to-expansion (rigid-to-flexible) ($p=0.7470$) were not significantly different.

[Conclusion] The ratios suggest that rigid and flexible bronchoscopy are equally efficacious in assessing the severity of TM. This implies that rigid and flexible bronchoscopy can be used interchangeably in a clinical setting.

THE FINANCIAL IMPACT OF CLINIC NO SHOW RATES IN AN ACADEMIC PEDIATRIC OTOLARYNGOLOGY PRACTICE

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Outcome Objectives: To investigate determinants of no show rates in an academic pediatric otolaryngology practice including appointment time, age, sex, new patient status, payer mix, and median household income by zip code.

Methods: Retrospective chart review of clinic no show rates and patient demographics in a free standing children's hospital and affiliated outpatient clinics across eight providers in a one-year period.

Results: Analysis shows that the overall no show rate across all providers was 14% with the highest rate of 21% in the zip code with the lowest median income. There was no difference in no shows by age, sex, providers, or appointment times. However, in two providers, over half of no shows were new patient encounters in the higher income group. On average, seventy-eight percent of no shows had public insurance. Lower median income and higher proportion of public insurance were highly correlated with more no shows, but the overall difference across all providers was not significant ($p=0.12$). Lost revenue on no shows alone range from \$191K to \$384K. The average percentage of the amount billed paid by insurance range from the lowest by out-of-state Medicaid=16% to the highest by managed care=54%.

Conclusion: No show rates account for a significant portion of lost revenue in the outpatient setting for an academic practice, and correlate with patient's median income and payer type. New patients in lower median income households may need different appointment reminders. Future clinic templates should be optimized for no shows to increase productivity and access to care.

HEMANGIOMA IN A CERVICAL LYMPH NODE: A CASE REPORT AND REVIEW OF THE LITERATURE

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Introduction

Hemangiomas within lymph nodes are extremely rare. To our knowledge, there are only two other reported cases in the head and neck literature.

Understanding the appropriate workup and imaging studies of this mass is crucial in successfully treating the patient.

Methods

Case report and literature review. The patient's pertinent history, clinical findings, and radiologic studies are examined.

Results

The case is of a 11 year old female who presented to our outpatient clinic with a right neck mass. She localized the mass to the right submandibular region and reported that it was painless in nature. She was prescribed a course of antibiotics by her primary care doctor, which did not reduce the size of the mass. On exam, she was found to have a 3 cm mass in the right submandibular region. It was soft, discrete, nontender, and mobile. A CT scan from that time revealed a mixed solid and cystic lesion in the right submandibular space, adjacent to the submandibular gland. Lab results returned negative for any infectious organism,

including bartonella and atypical mycobacteria. She was taken to the operating room for an excision of the mass. Final pathology returned positive for hemangioma of a lymph node.

Conclusion

Although rare in nature, hemangiomas in lymph nodes should be considered when working up a neck mass in an atypical location. CT is an important modality in helping to establish the diagnosis and should be obtained in any patient with an unusual presenting neck mass.

DECISIONAL REGRET IN PARENTS CONSIDERING ADENOTONSILLECTOMY OR TYMPANOSTOMY TUBE INSERTION FOR THEIR CHILDREN

Mary Purcell

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Objective: The aim of this study was to describe the level of decisional regret experienced by parents considering elective pediatric otolaryngology surgeries and to determine relations among decisional regret, decisional conflict, and perceptions of shared decision-making.

Methods: A prospective cohort study was conducted at an academic pediatric otolaryngology clinic. Participants included 64 parents of children less than 6 years of age who underwent consultation for adenotonsillectomy or tympanostomy tube insertion. Parents completed the Decisional Regret Scale (DRS), Decisional Conflict Scale, and Shared Decision-Making Questionnaire-Parent version. Surgeons completed the Shared Decision-Making Questionnaire-Physician version.

Results: Thirty-five parents (54.7%) reported no decisional regret, while 28 parents (43.7%) had mild decisional regret. Only one parent experienced moderate to strong decisional regret. Parent ratings of shared decision-making were significantly negatively correlated to total DRS scores ($r = -0.254$, $p = 0.045$). However, physician ratings of shared decision-making were not significantly related to DRS. Parents with significant decisional conflict and whose children experienced postoperative complications had significantly higher DRS scores ($p = 0.020$ and $p = 0.035$, respectively).

Conclusions: Many parents experienced no decisional regret pertaining to their child's elective surgical consultation. Parents who perceived themselves to be more involved in the decision-making process had less decisional regret. Future research should explore the influence of decisional regret on health outcomes and develop methods to better engage parents in shared decision-making.

IDOPATHIC THROMBOCYTOPENIA PURPORA FOLLOWING TONSILLECTOMY: CASE REPORT AND REVIEW OF THE LITERATURE

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Introduction: Postoperative-bleeding is the most common complication following tonsillectomy that requires surgical intervention. This risk is increased in patients with coagulopathies. Idiopathic thrombocytopenic purpura (ITP) is a transient coagulopathy that can have multiple etiologies. In this report we discuss a rare case of a post-tonsillectomy patient with hemorrhage in the setting of ITP.

Methods : Case report discussing the patient's pertinent history and clinical findings in addition to a literature review.

Results: Patient is a 5 year old girl with a medical history of Gianne-Barre syndrome, presented with bleeding status-post tonsillectomy 3 days prior. On the day of admission, the parents reported the patient started to have some bleeding from her nose, eventually progressing to hemoptysis. She was found to have a hemoglobin of 11.2 and platelets of 3,000. In preparation for surgical control of her oral cavity bleeding, she was transfused with both platelets and PRBC. Oral-cavity exam in the operating room showed significant ecchymosis of the soft palate bilaterally with edema of the oral cavity, tonsillar fossa, and nasopharynx with bright red generalized oozing. Bismuth was placed in both fossa, and the nasopharynx was filled with Surgiflo with thrombin and there was no further bleeding. Hematology was consulted and she was diagnosed with ITP. Treatment consisting of IVIG and steroids was initiated with complete resolution of her symptoms.

Conclusion: Post tonsillectomy hemorrhage is a well-established post-surgical complication. The etiologies, signs, and symptoms of ITP and its post-surgical impact are important to be aware of when managing these patients.

ONLINE TONSILLECTOMY RESOURCES FOR PARENTS: A SYSTEMATIC ANALYSIS OF READABILITY, QUALITY, COMPREHENSIVENESS, AND LEVEL OF CONSENSUS

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Objective: Post-tonsillectomy, parents are expected to manage issues surrounding pain, dehydration, and nausea/vomiting. Parents often look on the Internet for medical information but the quality of these websites is unknown. This study aims to assess the readability, clarity, comprehensiveness, and consensus of information on the Internet that parents may use.

Methods: A targeted Google search was performed to identify websites relating to pediatric perioperative tonsillectomy care. The first 30 publically accessible results written in English underwent a multi-stepped analysis. Readability was determined through the Simple Measure of Gobbledygook readability formula, Flesch-Kincaid Grade Level, and Flesch Reading Ease Scale. Information quality was assessed by the presence of the World Health Organization HONcode logo. Comprehensiveness assessment was conducted using a custom validated checklist. Level of recommendation consensus was elucidated by frequency effect sizes calculation with coded themes.

Results: Readability assessments showed that most websites were above the recommended reading level for the general population and only 10% of websites were considered “fairly easy” to read. Five websites displayed the HONcode logo, with no significant difference in readability when compared to non-HONcode websites ($p>0.05$). An average of 3.5 of 5 perioperative dimensions were addressed. Hygiene and activity recommendations had the highest consensus

(100% and 81% moderate strength respectively), and pharmacologic management was the most varied (62% moderate strength association).

Conclusion: Websites in this study were of low quality, incomplete, and composed of broadly varying recommendations of poor readability. Improved information sharing is necessary to establish homogeneous guidelines and to encourage judicious caregiver decisions.

DYNAMIC TONSILLAR PROLAPSE MASQUERADING AS PARADOXICAL VOCAL FOLD MOVEMENT DYSFUNCTION

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Introduction:

Paradoxical vocal cord movement dysfunction (PVMD) is a disorder in which the vocal cords involuntarily adduct during inspiration resulting in stridor, cough and dyspnea. Additional sites of obstruction have been identified as sources of Periodic Occurrence of Laryngeal Obstruction (POLO) that mimic PVMD and treatments vary with site of obstruction.

Objective:

To evaluate pediatric patients presenting for evaluation of exertional stridor and dyspnea suggestive of PVMD who were found to have a dynamic obstruction of the upper airway due to adenotonsillar hypertrophy and prolapse.

Methods:

Retrospective chart review of patients diagnosed with exertional dynamic tonsillar prolapse whom have undergone adenotonsillectomy. Clinical characteristics, spirometry, flow volume loops(FVLs), exam findings and response to adenotonsillectomy were recorded.

Results:

Seven patients with exercise induced stridor and dyspnea whom underwent exercise spirometry then subsequent adenotonsillectomy were identified. Symptomatic co-morbidities were common and included: rhinitis (43%), reflux (29%), sleep disordered breathing (29%), asthma (14%), obesity (14%),

prematurity (14%) and anxiety/PTSD (14%). Preoperative use of bronchodilators or reflux medications was common. All patients were noted to have >50% oropharyngeal obstruction secondary to tonsillar hypertrophy and dynamic lateral pharyngeal collapse or tonsillar prolapse with transoral inspiration. No exercise induced PVMD was identified. All baseline and most exertion FVC, FEV1, FEV1/FVC and FEF 25-75% were normal. Four patients had FVLs suggestive of obstruction. All patients had symptomatic improvement after adenotonsillectomy.

Conclusions:

Dynamic tonsillar prolapse can result in subjective exertional stridor and dyspnea with objective upper airway resistance mimicking PVMD and treatment with adenotonsillectomy can greatly reduce symptoms.

MYCOBACTERIUM AVIUM PRESENTING AS RECURRENT ACUTE OTITIS MEDIA IN A TODDLER: A CASE REPORT AND TREATMENT RECOMMENDATIONS

Anthony Sheyn (M.D.)

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Introduction: Mycobacterium Avium Intracellulare is an extremely rare cause of middle ear disease. To our knowledge only 10 cases have been presented in the literature. We present a case of an 18 month girl who presented with a middle ear mass and abdominal mass suspicious for soft tissue sarcoma.

Discussion: An 18 month old girl presented to with frequent otitis media starting at age 4 months. Her left ear was the only ear that was ever found to be affected. Prior to presentation she was found to have a left otitis media with foul discharge and was evaluated by an Otolaryngologist at an outside facility who found a granuloma in her left ear which was biopsied. The biopsy results were inconclusive and diagnostic imaging was undertaken which showed a middle ear soft tissue density, temporal bone involvement and mass in the bladder. She was subsequently referred to our facility. Repeat imaging of the bladder mass showed no evidence of the mass and it was attributed to cystitis. Persistent middle ear and temporal bone changes led to middle ear exploration with removal of the middle ear mass. Erosion of the incus and complete obliteration of the tympanic membrane were found. Histology and microbiology were positive for MAI. Patient was started on appropriate medication and subsequently underwent reconstruction and ossiculoplasty.

Conclusion: MAI involvement of the middle ear is extremely rare. This is the 11th documented case to our knowledge. With appropriate diagnosis and treatment, usually surgical, good outcomes can be obtained.

OCCUPATIONAL EXPOSURE TO HUMAN PAPILLOMA VIRUS (HPV) AND PROPHYLACTIC VACCINATION

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OBJECTIVES:

1. Increase awareness of the surgeon's exposure to human papilloma virus (HPV) in the healthcare setting, particularly the operating room.
2. Demonstrate the benefits of prophylactic vaccination for surgeons to minimize risk of HPV-related diseases.

Methods:

There currently are no standards for work place vaccination against HPV. Our institution is developing a novel program through employee health that allows surgeons to be vaccinated with Gardasil. The vaccination program is completely optional. The goal is to limit potential sequelae of HPV viral particle exposure in the operating room.

Summary of Results:

This presentation will focus on the process of developing a system through employee health to initiate a Gardasil vaccination program. Secondly, the presentation will focus on the potential benefits of vaccination and the risks of occupational exposure to HPV in the operating room. There is an increase in the surgeon's exposure to HPV related pathologies and increasing measures need to be taken in order for short and long-term protection.

DEVELOPMENT OF NEW HEARING RELATED QUALITY OF LIFE INSTRUMENT

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Background:

One in 500 babies in the United States is born deaf or hard of hearing (DHH). Early diagnosis of hearing loss is stressful and can impact the quality of life (QOL) of both infants and their parents; however, no quantitative way exists to assess the impact of interventions on hearing-related QOL.

Methods:

We performed semi-structured focus groups of clinical and educational providers for DHH children and interviews of hearing parents of 0-2-year-old DHH children. Transcripts were analyzed using grounded theory to identify key elements influencing hearing-related QOL and to develop a novel questionnaire based on these elements. The questionnaire was reviewed with providers and parents and iteratively modified based on their feedback.

Results:

We conducted 4 focus groups (n=33 providers) and interviews (n=9 parents). All children had permanent, congenital hearing loss with severities ranging from mild unilateral to bilateral severe-to-profound.

We identified nine major domains that impact child and parent QOL: (1) Child behavior, (2) Child's socioemotional development, (3) Child's communication ability, (4) Child's mood, (5) Caregiver's ability to communicate with the child, (6) Physical challenges, (7) Caregiver perceptions of the diagnosis, (8) Emotional support for the caregiver, and (9) Managing the logistics of hearing loss. A parent-proxy questionnaire was developed to address each of these domains.

Conclusions:

We developed and are validating a survey to assess the QOL of the DHH child/parent dyad. This instrument will be a valuable clinical and research tool to quantitatively assess the QOL outcomes of multidisciplinary interventions in this population.

RHABDOMYOSARCOMA OF THE HARD PALATE: CASE REPORT & TREATMENT CHALLENGES

Anthony Sheyn (M.D.)

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Introduction: Rhabdomyosarcoma (RMS) is a malignant neoplasm of mesenchymal tissue found predominantly in the pediatric population. Among pediatric sarcomas, RMS is the most common, accounting for 3-4% of all pediatric malignancies. Furthermore, up to 35% of RMS present in the head and neck. When occurring in the oral cavity, RMS typically involves the soft palate. We present a rare case of hard palate pediatric RMS. Due to the rarity of this disease, many treatment challenges were identified.

Case: A 17 year old patient was referred to us for a recurrent hard palate RMS. He was initially diagnosed 2 years ago and underwent partial resection of the right hard palate mass due to uncertain etiology. He then underwent chemoradiation therapy. A follow-up MRI at 2 years showed a suspicious lesion in the primary site. He was then referred to our center and underwent resection with primary closure. Specimen was positive for recurrent RMS. Additional imaging showed bilateral enlarged lymphadenopathy and patient then underwent lymph node biopsy. Positive margins were identified and a decision was made for re-resection with split thickness skin graft. He was then restarted on a regimen of chemoradiation.

Conclusion: Hard palate RMS is extremely rare. Our institution is well versed in treating pediatric RMS, even so several treatment challenges occurred during the treatment period. More investigation is needed to determine the appropriate strategy for pediatric oral cavity RMS.

POST-OPERATIVE MONITORING FOLLOWING ADENOTONSILLECTOMY FOR SEVERE OBSTRUCTIVE SLEEP APNEA

Cecil Rhodes (M.D.)

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Introduction: Patients undergoing adenotonsillectomy (T&A) for severe obstructive sleep apnea (OSA) are usually admitted for observation overnight, and many surgeons use the Intensive Care Unit for observation due to the risk of post-surgical airway obstruction. Given the limited resources of the ICU, there's a push to better define the patients who require post-operative monitoring in the ICU.

Methods and Materials: IRB approval was obtained from the University. So far 38 patients have been enrolled in the study. Patients who had cardiac or craniofacial co-morbidities were excluded. Patients undergoing T&A for severe OSA were monitored in the PACU post-operatively. If patients required supplemental oxygen or developed hypoxia while in the PACU within the 3 hour monitoring period they were admitted to the PICU.

Results: 6/38 patients were admitted to the ICU for monitoring. The AHI of the patients who were admitted to the ICU were 21 - 96. The Oxygen nadir ranged from 50-82%. Two patients developed post-obstructive pulmonary edema while in the PICU. One required BiPAP overnight. Two patients were intubated overnight, both had an AHI greater than 50 and an oxygen nadir >50%. All 6 were considered to be obese.

Conclusion: Additional patients are needed to draw formal conclusions. Based on the initial data not all patients with severe OSA require ICU monitoring. Initial data suggests that patients who require monitoring are those with an AHI greater than 50, O2 nadir less than 80%, obesity and age younger than 2.

HARMONIC DISCRIMINATION IN COCHLEAR IMPLANT USERS

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Introduction

Prior studies in our laboratory have shown that children who have spent nearly their entire lives hearing with cochlear implants, and perform near normal on speech tests, do not perceive musical sounds like normal hearing children. This suggests that a cochlear implant does not transmit the full spectrum of sound necessary for perceiving music.

Objective

This study compared cochlear implant (CI) subjects and normal hearing subjects in distinguishing an instrument note in which 1st and 2nd harmonics have been modified.

Methods

Four sets of stimuli were made for the test, altering the 1st and 2nd harmonic for the trumpet (TF1, TF2) and saxophone (SF1, SF2). For each of these sets, the altered harmonic was attenuated from 0 to -30 dB in steps of 2 dB. An adaptive 3 choice forced alternative testing program created in Eprime determined the threshold at which subjects can differentiate a modified and unmodified sound. 16 CI users and 11 normal hearing subjects were tested.

Results

CI users had a significantly higher threshold value than normal hearing listeners for the TF1 ($p < 0.001$) and SF2 ($p < 0.001$) modifications while no significant difference was found for the TF2 ($p = 0.451$) and SF1 ($p = 0.316$) modifications.

However, with all thresholds averaged, CI users had a significantly higher threshold ($p < 0.001$) than normal hearing listeners. No correlation was found between threshold values and speech perception score. The decreased sensitivity of CI users to modifications of harmonics could be a factor in their poor music perception.

PARTIAL TONSILLECTOMY: QUALITY, CONTENT, AND VALIDITY OF HEALTH INFORMATION

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Introduction: Variability in the quality of online medical information has been well documented in the past. However, no study has evaluated the information available regarding partial tonsillectomy, which has become an increasingly popular treatment for sleep-disordered breathing in children. The Internet is a popular source of patient education, and it is important to ensure that the information provided helps parents make the most informed decisions for their children. The purpose of this study was to evaluate the quality and content of online information regarding partial tonsillectomy.

Methods: A web search was performed using the search term “partial tonsillectomy” in Google, Yahoo!, and Bing. The first fifty websites from each search were evaluated for authorship, content, and validity. A Freeman-Halton extension of Fisher’s Exact Test was used to compare differences between search engines. A second search using more technical search terms “intracapsular tonsillectomy” and “tonsillotomy” was also performed. Differences between search terms was compared using Fischer’s Exact Test.

Results: Most websites did not mention eligibility criteria (31.7%), describe risks (38.7%), or provide a description of the procedure (46.7%). Furthermore, less than half of websites referenced peer-reviewed literature (43.3%) or provided information to contact a physician (22%).

Conclusion: Altogether, these results suggest that current online information regarding partial tonsillectomy may not provide adequate patient education. Efforts should be made to simplify writing and include essential information in order for current educational materials to benefit a wider readership.

READABILITY OF PEDIATRIC OTOLARYNGOLOGY INFORMATION BY TOP CHILDREN'S HOSPITALS AND ACADEMIC OTOLARYNGOLOGY DEPARTMENTS

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Introduction: Over 80% of parents with children that have otolaryngology-related illnesses have Internet access, and half of these parents use the Internet to educate themselves about their child's illness. Ensuring that patient-directed health information is understandable is important for any medical condition, but becomes even more important for pediatric conditions because the readership will include children, teenagers, and young adults. Furthermore, the readership includes parents, who are responsible for making medical decisions for their children. The purpose of this study was to perform a readability analysis of patient educational materials available from leading online sources.

Methods: All pediatric otolaryngology-related from the online health libraries of the top 5 US News & World Report-ranked children's hospitals, top 5 Doximity-ranked pediatric otolaryngology departments, and the AAO-HNSF were collected. The readability grade for each article was calculated using the Flesch-Kincaid Grade Level, Flesch Reading Ease, Gunning-Fog, Coleman-Liau, Automated Readability Index, and SMOG grade. Intraobserver and interobserver reliability were assessed.

Results: In total, 348 articles were analyzed. Intraobserver and interobserver reliability were both excellent with an ICC of 0.99 and 0.96, respectively. The average readability grade across all authorships and readability assessments exceeded both the sixth grade level recommended by the AMA and NIH as well as the 8th grade level of the average American adult.

Conclusion: Current online health information related to pediatric otolaryngology may be too difficult for the average reader to understand. Revisions may be necessary in order for current materials to benefit a larger readership.

USE OF A STEROID-RELEASING STENT IN SUBGLOTTIC STENOSIS: A CASE REPORT

Sidrah M Ahmad (M.D.)

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Subglottic stenosis affects approximately 1-2% of infants in the neonatal intensive care unit. These infants often require a tracheostomy for airway protection which carries a mortality rate of 1-2% per year. Furthermore, these patients require a laryngotracheal reconstruction at a later date to definitively correct the stenosis. We present a patient on whom we utilized a steroid-releasing stent after dilation of grade 3 subglottic stenosis. Although the patient did require initial tracheostomy tube placement, we noted good results utilizing a steroid-releasing stent in the limited follow up available thereby potentially decreasing both the mortality risk as well as the need for an open airway procedure.

IATROGENIC TRICHLOROACETIC ACID INJURY CAUSING NECROTIZING OTITIS AND DEAFNESS BILATERALLY: A CASE REPORT

Tyler R. Halle

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Introduction: Trichloroacetic acid is a corrosive agent sometimes used to facilitate the healing of tympanic membrane perforations and in the treatment of acute otitis externa. We present a previously unreported iatrogenic injury resulting from the erroneous instillation of trichloroacetic acid into the ears following tympanostomy tube insertion.

Case presentation: A 10-month old infant suffered total perforation of each tympanic membrane, necrotizing otitis media and externa, and progressive hearing loss with cochlear ossification (not identifiable at pre-operative imaging).

Management and Outcome: She underwent staged bilateral ear debridement and mastoidectomy, ear canal closure and cochlear implantation. Now nearly five-years old, and three years after her initial cochlear implant, she is a listening-speaking communicator attending age-appropriate class in regular school. With her cochlear implants, she has auditory thresholds in the normal range.

Discussion: Medication administration protocols may minimize the risk of errors, and should be observed with the administration of all medications in all settings. When a harmful agent has been instilled into an ear, emergency intervention includes suctioning away the offending substance, and (depending on the agent) irrigating copiously with saline while suctioning.

OUTPATIENT MANAGEMENT OF PAEDIATRIC ACUTE MASTOIDITIS

Ahmed Alkhateeb (M.D.)

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Introduction: Traditional treatment of uncomplicated acute mastoiditis includes myringotomy and inpatient antibiotic therapy. At our centre, selected cases of uncomplicated acute mastoiditis are treated with daily outpatient intravenous antibiotic therapy.

Objectives: Evaluate our experience with outpatient management of acute mastoiditis and identify risk factors for failure of outpatient intravenous therapy.

Methods: A retrospective chart review of paediatric patients diagnosed with acute mastoiditis between 2013 and 2015 was performed. Patients with syndromes, immunodeficiency, cholesteatoma, chronic otitis media, cochlear implant in the affected ear, or incidental mastoid opacity were excluded.

Results: 59 children were treated for acute mastoiditis, including 31 hospitalizations and 28 outpatients. Patients managed as outpatient had a 93% cure rate. hospitalized children has a higher leukocytosis ($p=0.04$) and were more likely to be febrile ($p<0.001$) on presentation. Eighteen hospitalized and one outpatient had complicated acute mastoiditis. Two patients failed outpatient therapy and were admitted: one for myringotomy and piperacillin-tazobactam treatment and one required a mastoidectomy. 4/28 children treated as outpatient underwent myringotomy and tube insertion, 2 underwent myringotomy and tube after admission and 22 didn't require tube insertion. The average total duration of intravenous antibiotic therapy was respectively 4.8 and 18 days in the outpatient and hospitalized group. The average duration of admission was 5.6 days.

Conclusion: Outpatient intravenous therapy for management of paediatric uncomplicated acute mastoiditis is safe, successful, and efficient. Careful selection criteria and close monitoring are key for success. Furthermore, this study suggests that myringotomy is probably not necessary for the treatment of uncomplicated acute mastoiditis.

DANGERS OF BUTTON BATTERIES: A CASE STUDY OF A 2 YEAR OLD

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Objective: To review a unique case of button battery ingestion causing a tracheoesophageal fistula.

Case: This is an individual case report of a pediatric patient initially presented to his Pediatrician with heavy breathing, was treated for croup and placed on oral steroids. He presented to his local emergency room 3 days later with decreased appetite and lethargic. In local ER was treated with more oral steroids and IV fluids, once stable was discharged. He presented again next day to local ER with breathing concerns, a chest x-ray done showed object concerned for button battery. Patient transported via helicopter to our hospital. The patient required emergent removal of the button battery under anesthesia. Once removed noted to have severe esophageal erosion/perforation at the site of the foreign body. Patient required admission to the Intensive Care Unit where he was noted to have some desaturations, ETT was repositioned and bedside bronchoscopy was done. Patient was placed on ECMO, with concerns of possible Tracheoesophageal fistula. The patients continued to have complications after button battery removal, required sternotomy and TEF resection, slide tracheoplasty and esophageal perforation repair.

The patient has required multiple microlaryngoscopy/bronchoscopy procedures to evaluate his airway.

Conclusion: Button battery ingestion rates have increased over the years in the pediatric population. Immediate evaluation and diagnosis is required to avoid complications.

PEDIATRIC CERVICAL TUBERCULOUS ADENITIS: A REVIEW OF THE LITERATURE AND PUBLIC HEALTH CONCERNS

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Purpose: To present a rare case of unilateral cervical tuberculous adenitis in a pediatric patient and discuss the diagnostic and therapeutic challenges, as well as the public health concerns prompting the need for timely differentiation between cervical tuberculous adenitis and nontuberculous mycobacterial adenitis.

Method: Case report presentation with review of the current literature

Summary: Cervical adenitis is a very common presentation in the pediatric population. In the United States most cases are reactive in nature secondary to viral or bacterial infections. Although an important health concern in developing countries, Tuberculosis is rarely encountered in the United States. We intend to present a case of cervical tuberculous adenitis in an immunocompetent patient who had previously completed latent Tuberculosis treatment two years prior to presentation with a normal post-treatment chest X-ray. We also intend to discuss the diagnostic and therapeutic challenges these cases present and the necessity for prompt and accurate differentiation between cervical adenitis due to *Mycobacterium tuberculosis* and other infectious etiologies to minimize morbidity for the patient and to prevent infection of health care providers and members of the community. Our case demonstrates the need for an elevated index of suspicion for tuberculous adenitis when evaluating pediatric patients with prior tuberculous diagnosis regardless of prior completed treatment for latent Tuberculosis and length of time from initial tuberculous diagnosis and current presentation. This poster will review the relevant literature for pediatric cervical adenitis with attention to *Mycobacterium tuberculosis* and public health concerns when managing patients with cervical Tuberculosis.

RETROPHARYNGEAL ABSCESS WITH MEDIASTINAL PROGRESSION IN INFANTS: A CASE SERIES AND REVIEW OF THE LITERATURE

Kelly Scriven (M.D.)

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Introduction: Deep neck infections are common in infants and occur in several anatomic subsites including the retropharyngeal space. Retropharyngeal abscesses are significant given their propensity for mediastinal extension. Most retropharyngeal abscesses are seen in children under four years old. Failure to diagnose and treat retropharyngeal abscesses can lead to life threatening complications.

Case Description: We present two cases of retropharyngeal abscess with mediastinal extension in infants. In one case, an incompletely vaccinated ten-month old male presented with cough, rhinorrhea, and fevers. Despite antibiotic treatment, he developed Horner's Syndrome and hypoxia. A CT scan showed a C1-T7 retropharyngeal abscess. He underwent trans-oral incision and drainage and recovered fully. In another case, a twelve-month old infant presented with eight days of fevers and neck pain. A CT scan showed a retropharyngeal collection extending to the mediastinum and right hemithorax. Trans-oral incision and drainage and VATS thoracotomy were performed for abscess drainage. He recovered fully with antibiotics.

Discussion: Retropharyngeal abscesses are increasing in incidence faster than other deep neck infections. Both cases we report had delayed diagnosis of the abscess leading to mediastinal extension and necessitating urgent surgery. Practitioners should maintain a high index of suspicion for deep neck space infections in infants with fevers and leukocytosis. Imaging should be prompt, and incision and drainage is standard of care when an abscess is identified. Trans-oral and trans-cervical drainage may be supplemented by thorascopic approaches. Patients should receive antibiotics with MRSA coverage. Practitioners should be exceptionally vigilant in treating patients under eighteen months old.

DIFFERENCES IN CLINICAL PRESENTATION OF NECK ABSCESSES BETWEEN INFANTS (<1 YEAR) AND CHILDREN (1-18 YEARS)

Neha Kumar

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Objectives: To characterize differing presentations of neck abscesses between infants (<1 year) and children (1-18 years) by comparing abscess location, C-reactive protein (CRP) levels, hospital stay duration, and microbiology.

Methods: This retrospective cohort study divided groups into infants and children surgically treated for deep neck abscesses from 2004-2014. Values were obtained from hospital records and multivariate analysis was performed to identify significant differences between groups based on abscess location, microbiology, hospital stay duration, and CRP levels.

Results: 248 patients (73 infants, 175 non-infants) were included. Both populations presented most commonly with deep neck abscesses. Methicillin-resistant *Staphylococcus aureus* (MRSA) and Group A *Streptococcus* were the predominant organisms in infants and non-infants respectively. Infants were more likely to have MRSA than non-infants ($p < 0.0001$; $CI = 0.05$) and had longer hospital stays with mean of 6.24 days compared to non-infants with mean of 3.90 days ($p = 0.0002$; $CI = 0.05$); this difference was not found in non-infants ($p = 0.2186$; $CI = 0.05$). There was no significant difference of CRP levels between groups ($p = 0.873$; $CI = 0.05$). No correlation between CRP levels and MRSA colonization was seen in either infants ($p = 0.5487$) or in non-infants ($p = 0.7228$).

Conclusion: In this single-center study, infants presented with significantly higher incidence of MRSA colonization and longer hospital stay duration compared to non-infants. Infants with MRSA had a significantly longer hospital stay than those without; this did not extend to non-infants. While no correlation between CRP levels and MRSA colonization was found, more studies should examine this relationship. These findings may have implications for antibiotic therapy selection and treatment planning.

EVALUATION OF POST-OPERATIVE USE OF IBUPROFEN ON POST- TONSILLECTOMY HEMORRHAGE RATE

Daniela Carvalho (M.D.)

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OBJECTIVE:

To determine the effect of routine ibuprofen use on post-tonsillectomy bleed rate when compared to historical controls.

STUDY DESIGN:

Case series with historical controls.

METHODS:

With the FDA black box warning on the use of codeine, in April 2014 we transitioned to a combination of acetaminophen and ibuprofen for post-operative analgesia in all patients undergoing tonsillectomy. The number of surgeries and the bleeding rates were collected on a monthly basis from Jan 2010 until December 2015. The rate of bleeding was compared between the two periods, before and after the institution of routine ibuprofen use.

RESULTS:

A total of 7047 patients underwent tonsillectomy between 1/1/2010 and 12/31/2015, with 5152 cases prior to Ibuprofen use and 1895 cases after the transition. The rate of post-tonsillectomy hemorrhage was 1.6% prior to ibuprofen and 2.1% after the transition. Using a logistic regression model, the bleeding rates were shown to not be significantly different after the adoption of ibuprofen to the post-operative when compared to historical controls. The test

of the hypothesis of rates equality yielded a 0.39 significance level. The test for no effect of time yielded a 1.00 significance level. Therefore there is no evidence of trend in time and also no statistical difference between the bleeding rates of the two periods.

CONCLUSION:

We did not observe any statistically increased rate of post-tonsillectomy bleeding when compared to historical controls with the incorporation of routine use of ibuprofen in our postoperative pain management.

OBESITY AND TONSILLECTOMY: CORRELATION BETWEEN BODY MASS INDEX AND INDICATIONS FOR SURGERY

Wen Jiang (M.D.)

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Objective: To compare the Prevalence of Obesity in children undergoing tonsillectomy for sleep disorder breathing (SDB), recurrent tonsillitis or both.

Study Design: Retrospective case study.

Methods: We reviewed the electronic medical records of all patients undergoing tonsillectomy (with or without adenoidectomy) from 2/1/2015-1/31/2016. Patient's age, gender, procedure, indications for surgery and BMI percentiles were recorded. Statistical analysis was performed using logistic regression, utilizing the CDC categories for BMI percentile-for-age weight status.

Results: A total of 1150 children underwent tonsillectomy during the study period, 563 females and 587 males. The average age was 7.2 years (1 to 19 years). 817 children had tonsillectomy for SDB, 190 for tonsillitis and 141 for both indications. The average BMI percentile was 62.05 for all patients, 62.99 for patients with SDB, 57.25 for patients with tonsillitis, 63.11 for patients with recurrent tonsillitis + SDB. Gender and age were not predictive obesity. Children who had tonsillectomy due to SDB (with or without recurrent tonsillitis) had a statistically significant higher chance of being overweight, obese or morbidly obese ($p < 0.0001$). In the group of children who underwent tonsillectomy for SDB, 11.8% were overweight, 16.5% were obese and 9.8% were morbidly obese.

Conclusions: Children undergoing tonsillectomy with the diagnosis SDB are more likely to be overweight, obese or morbidly obese when compared to children undergo this procedure for recurrent tonsillitis only. The prevalence of obesity may contribute significantly to residual sleep apnea after surgery and needs to be addressed for both pre-operative counseling and post-operative management of these children.

ALLERGIC FUNGAL SINUSITIS IN THE PEDIATRIC POPULATION

Sarah Hart

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Objectives.

Characterize pediatric patients with chronic rhinosinusitis(CRS) and allergic fungal sinusitis(AFS)

Study Design.

Retrospective summary

Setting.

Tertiary children's hospital

Methods.

Chart review of patients with CRS and AFS treated between January 2014 to December 2015. Data included demographics, patient characteristics, CT findings, medical and surgical intervention, and culture results.

Results.

Forty-one patients(15 AFS, 26 Non-AFS)were reviewed. Both presented with congestion, rhinorrhea, obstruction, and "sinusitis". Allergic rhinitis was significantly associated with AFS patients, odds ratio(O/R) 9.1(95% CI 2.1-39.6), with history of positive aeroallergen testing(O/R 9.2; 95% CI 2.1-39.6). Nasal

polyps on exam were significantly associated with AFS(O/R 8.8; 95% CI 1.7-47.5). There were no differences in Lund-Mackey Scores between groups, but bilateral disease was less likely in AFS(O/R 0.16; 95% CI 0.04-0.65). CT imaging was 95% specific for diagnosing AFS and 75% sensitive with an area under the receiver operator curve(AUROC) of 0.83(95% CI 0.68 - 0.98). The median age at first surgery was older for AFS(14.4 ± 2.8 years vs. 10.2 ± 4.4 for Non-AFS, $p < 0.05$). No significant differences in total number of surgeries. Intraoperative findings of polyps was more likely in AFS (O/R 5.5; 95% CI 1.2-24.1) as was allergic mucin(O/R 2.3; 95% CI 1.5 - 3.4). Positive fungal cultures were identified in 9/10 AFS cases, with 6 *Curvularia*(60%), 2 *Bipolaris*(20%), and 1 *Aspergillus*(10%).

Conclusions.

Nasal polyposis, older age, history of test proven aeroallergen allergies, with unilateral CT sinus disease are predictive for AFS in the Southeast Region. CT is highly specific for the diagnosis of AFS.

RECONSTRUCTIVE CHALLENGES IN PEDIATRIC DESMOID FIBROMATOSIS OF THE MANDIBLE – TWO CASE REPORTS AND REVIEW OF THE LITERATURE

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Introduction: Desmoid fibromatosis (DF) is a rare, benign soft tissue neoplasm with high rate of local recurrence. When it presents in the head and neck in children, its infiltrative nature and ability to involve bone as well as neurovascular structures demands careful considerations of the reconstructive options. Gross total resection (GTR) is the gold standard of treatment, but there is little discussion in the literature about strategies of reconstruction after surgery for DF.

Methods: Two case reports and literature review

Results: Case 1: A two-year-old boy presented with a large right mandibular mass which proved to be DF. GTR required partial mandibulectomy with immediate rib graft reconstruction. Case 2: A 15-month-old boy presented with DF of the right mandible. GTR involved marginal mandibulectomy and sacrifice of the inferior alveolar nerve. Both patients have experienced postoperative numbness of the lower lip. Bite/sucking trauma resulted in secondary granuloma of the lower lip which resolved without intervention in both children.

Conclusion: Surgical management of desmoid fibromatosis in the head and neck in children can be challenging given the desire to balance the preservation of form and function with the need to minimize local recurrence by achieving complete resection. If >25% of the height of the mandible is preserved, marginal mandibulectomy without reconstruction provides a simpler surgical treatment but may still result in postoperative lower lip numbness. If segmental mandibulectomy is required, we recommend immediate reconstruction. We favor rib grafting over free flap given the proven ability of nonvascularized rib to survive in children.

AN EVIDENCE-BASED PROTOCOL FOR MANAGING NEONATAL MIDDLE EAR EFFUSIONS IN BABIES WHO FAIL NEWBORN HEARING SCREENING

Brittany Weber (M.D.)

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Purpose: To evaluate the prevalence of middle ear disease in infants who fail newborn hearing screening (NBHS) and to review patient outcomes after intervention in order to propose an evidence-based protocol for management of children with otitis media with effusion (OME) who fail NBHS.

Methods: 86 infants with middle ear pathology were retrospectively reviewed after referral for failed NBHS. All subjects underwent a diagnostic microscopic exam +/-myringotomy +/- placement of a ventilation tube in the presence of a middle ear effusion and had ABR testing intraoperatively or at a later date.

Results: At the initial office visit, a definitive normal middle ear space bilaterally was documented in only 5 patients (6%), while 51/86 (59%) had at least a unilateral middle ear effusion. 52/86 (60%) neonates underwent myringotomy with tube placement due to presence of an effusion. 16/86 (19%) had normal hearing by ABR in the OR avoiding the need for any further audiologic workup. 54/86 (63%) had sensorineural hearing loss (SNHL) and were referred for amplification. 27/86 (31%) were initially observed with follow up outpatient visits. 25/27 (92%) eventually required at least unilateral tube placement due to OME and 49% were found to have bilateral SNHL.

Conclusions: An effective initial management plan for children with middle ear pathology and failed NBHS is diagnostic myringotomy +/- ventilation tube placement and intra-operative ABR. This allows for the identification and treatment of babies with a conductive component due to OME; accurate diagnosing of an underlying SNHL component and allows for prompt aural rehabilitation.

DANGERS OF BABY-LED WEANING

Chelsea Troiano (M.D.)

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Purpose: To raise awareness and educate medical professionals on the dangers of Baby- Led Weaning and better guide patient's families on food consistency progression to reduce the risk of foreign body aspiration.

Methods: Fundamental principles and philosophy of Baby-Led Weaning (BLW) were reviewed. World Health Organization (WHO) guidelines for feeding, speech language pathology (SLP) literature on the development of deglutition, United States Consumer Product Safety Commission (UPSC) guidelines for small toy parts and the SUSY Safe Project Database were examined. An assessment of rising popularity and a comparison between BLW literature and scientific literature was made.

Summary of Results: BLW is an approach to feeding in which 6 month old infants are transitioned to adult-finger-sized foods while weaning from milk, avoiding parent-fed purees. BLW is growing in popularity internationally and contradicts WHO guidelines for solid food introduction advocating for a progression of consistency from thins to solids. SLP research supports this progression as it protects the airway during the development of deglutition. Interestingly, BLW literature is inconsistent in the consistency of offered food. BLW also contradicts UPSC guidelines for small toy choking hazards. The SUSY database identifies the most common food foreign bodies.

Conclusions: BLW is an unsafe food progression philosophy that puts children at undue risk for foreign body aspiration. BLW guidelines are inconsistent across available forums and, are in opposition to widely accepted WHO and SLP recommendations. Awareness and education of patient's families is imperative to promote the safe and healthy eating of pediatric patients.

AIRWAY RECONSTRUCTION CODING IN 2017

Lawrence M Simon (M.D.)

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Purpose: To update the audience on the new codeset for laryngotracheal reconstructions in 2017 and to explain the process by which the new coding system was created.

Methods: The author is a senior member of the CPT and Health Policy Team for the AAO/HNS and was a lead expert in the crafting of the new coding system. He and the AAO/HNS CPT team worked with ASPO and the ALA to revise the codes used to report laryngotracheal reconstruction and update them to more accurately reflect current clinical practice.

Results: In 2013, the codes used for laryngoplasty were identified on an AMA RUC and CMS screen, which mandated review and revision of the codes to address the concerns of CMS. To address these concerns, airway reconstruction and laryngology experts from both pediatric and adult otolaryngology worked with the AMA and CMS to construct a much more contemporary code set that more accurately reflects current clinical practice. Pediatric otolaryngologists will need to be familiar with this new code set in order to properly code for airway reconstructions in 2017.

Conclusions: Starting in 2017, an entirely new set of codes will be used to report laryngotracheal reconstruction. Practitioners will need to be familiar with these codes and the process that lead to their creation in order to properly report their services in the coming year.

MANAGEMENT OF TONGUE LESIONS IN CONGENITAL HEMIFACIAL HYPERTROPHY

Steven Kennedy Dennis

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Objectives: Congenital hemifacial hypertrophy (CHFH), a subset of congenital hemihypertrophy, is a rare developmental anomaly characterized by asymmetric hyperplastic changes of hard and soft tissue of the face. These changes are hypothesized to be malformations during development of the neural tube or first branchial arch. Changes are typically bounded superiorly by the frontal bone, inferiorly by the mandible, and laterally by the ear while traditionally sparing the eye. We present a unique case of CHFH with ipsilateral anterior and lateral tongue lesions.

Methods: Case report.

Results: A 9 year-old female with CHFH presented with numerous papillate lesions on the anterior tongue and a larger lateral tongue lesion. She was taken to the operating room for biopsy and removal of the lesions to improve discomfort, irritation during mastication and social angst. Biopsies were taken from both areas, then radiofrequency ablation (Coblation) was utilized to remove the multiple exophytic tongue lesions. Pathology of the anterior tongue lesions showed mild hyperkeratosis and parakeratosis. Pathology of the lateral tongue lesion was consistent with a traumatic neuroma.

Conclusions: Treatment options for CHFH remain limited and primarily include surgical procedures aimed at aesthetic and functional improvements. Biopsies were benign, consistent with previous literature with no prior reports of malignancy specific to these patients. In treatment of the hypertrophic fungiform papillae and tongue tissue in CHFH, radiofrequency ablation proves a viable approach.

JUST SAY NO TO MODIFIED BARIUM SWALLOW STUDIES IN INFANTS UNDER 2 MONTHS

Arcangela Lattari Balest (M.D.)

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Background: Modified barium swallow (MBS) is the “gold standard” to assess swallowing disorders, however, testing under 48 weeks post-menstrual age (48PMA) is common to assess for silent aspiration (SA) despite the absence of laryngeal cough reflex (LCR). We reviewed MBS outcomes in this demographic.

Methods: Retrospective chart review of 144 children undergoing MBS 2012-2015.

Results: 144 consecutive patients underwent MBS during the time frame 2012-2015; 74 were <48PMA (197 MBS studies). 36.5% were born prematurely at <37 weeks gestation. SA was found in 52.7% of infants tested <48PMA. 53.4% of SA resolved by 48PMA. Only 4.1% (3/74) had persistent SA and LRI >48 PMA; 1.4% (1/74) with SA and LRI exhibited delayed cough after SA event. Despite the diagnosis of SA, these infants often displayed clinical signs during feeding indicative of aspiration.

Conclusions: Infants <48PMA often lack LCR rendering SA on MBS a developmental variant of normal. The term SA with pathologic connotation should be replaced with the term “infantile aspiration” in this age group. SA without cough often manifests with clinical signs not “silent” at all. In an era of cost containment and evidence-based best practice, MBS in this age group is contraindicated to assess for SA. These patients should be evaluated and managed clinically.

HEARING CHARACTERISTICS IN PATIENTS WITH MUCOPOLYSACCHARIDOSIS IV

Kyoko Nagao (PhD)

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Mucopolysaccharidosis IV (MPS IV; Morquio Syndrome) is a rare genetic disorder that causes skeletal deformity. Alongside the other symptoms, hearing loss is a common problem in patients with Morquio. However, hearing issues are frequently overlooked in these patients despite their detrimental influence on speech and language development and quality of life. As such, and because Morquio is such a rare disorder, the hearing function at a neurophysiological level has not been well-documented in these patients. The aim of this study was to examine the hearing function of fourteen patients with Morquio Syndrome (9 females and 5 males), ranging in ages from 12 to 38 years old. We recorded and analyzed the auditory brainstem responses (ABR), distortion product otoacoustic emissions (DPOAEs) and pure tone thresholds. The hearing status varied from normal to severe according to the pure tone audiometry. The type of hearing loss was not consistent either, with some patients presenting with conductive hearing loss, sensorineural hearing loss, or a combination of both. Over half of the patients tested in this study had abnormal DPOAEs in both ears. The results also indicated that some of these patients had abnormal DPOAEs, ABR, or both despite normal pure tone thresholds. The spectrum of hearing disorders in patients with Morquio should prompt for annual neurophysiological hearing testing regardless of their audiometric results.

LUC'S ABSCESS: THE SPECTRUM OF DISEASE INCLUDING THE FIRST REPORTED CASE WITH ASSOCIATED INTRACRANIAL ABSCESS

Mohit Sodhi

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Introduction: Luc's Abscess is defined as an extracranial subperiosteal temporal abscess, arising from acute otitis media (AOM). In 1900, Dr. Henri Luc first described this disease as being "particularly benign." We present 2 cases, including one in which the patient had significantly greater morbidity than previously reported.

Materials/Methods: Retrospective case review.

Results:

Case 1: A 4 year-old male presented with 2 weeks of left-sided otalgia followed by fever, left temporal skin swelling, otorrhea, and papilledema. Computerized tomography (CT) scan revealed a 3.5 x 1.2 x 2.3 cm Luc's abscess and 4.6 x 2.7 x 2.5 cm temporal lobe abscess with lateral sinus thrombosis and resultant intracranial hypertension. Both abscesses were drained and the patient was treated with intravenous (IV) antibiotics and anti-coagulation. Streptococcus pyogenes was diagnosed on molecular testing. The patient fully recovered after 6 weeks of medical therapy.

Case 2: A 7 year-old female had a more classic form of Luc's abscess, which was successfully treated as an outpatient, with oral antibiotics. Her relatively more benign clinical course was likely related to her timely diagnosis and treatment.

Discussion: These cases illustrate the spectrum of Luc's abscess, which has the potential to be life-threatening. Luc's abscess has previously been reported with associated lateral sinus thrombosis; but to our knowledge, this is the first documented case of Luc's abscess plus intracranial abscess in English-language literature.

Conclusion: Although Luc's Abscess usually follows a relatively benign clinical course, early diagnosis and treatment remain essential in order to prevent life-threatening disease progression.

FACTORS LEADING TO HOSPITAL READMISSION OF <2-YEAR-OLD TRACHEOSTOMIZED-VENTILATOR DEPENDENT INFANTS

Gangaram Akangire (M.D.)

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Background: There is significant variability in the treatment of infants and children with tracheostomy and home ventilator dependence. Knowledge of the factors leading to hospital readmission is sparse and may play a significant role in preventing readmissions, mortality and minimizing health care burden.

Objectives: Identify factors leading to hospital readmission of tracheostomized and/or ventilator dependent infants <2 years.

Methods: Retrospective review of tracheostomized and/or ventilator dependent infants who were being followed in the infant tracheostomy and home ventilator clinic from 2009-2013. Demographic and clinical data were collected and analyzed.

Results: The cohort consisted of 110 tracheostomized and/or ventilator dependent infants who received tracheostomy in the NICU. Chronic lung disease of infancy (other than BPD) is the most common reason for ventilator-dependence. Viral pneumonia/bronchiolitis was the most common reason for readmission followed by elective procedure and then equipment malfunction. Rhinenterovirus, followed by RSV was the most common viral etiology. More than 40% of the infants had >2 readmissions/year.

Conclusions: Viral infections specifically, rhinenterovirus is the leading cause of hospital readmission in this cohort of tracheostomized and/or ventilator-dependent infants. Complete data analysis is ongoing.

ADENOTONSILLECTOMY WITH PALATAL PPLICATION

P. Ryan Camilon (M.D.)

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Purpose: Adenotonsillectomy (AT) for obstructive sleep apnea (OSA) in children has a cure rate of 54-66%. Therefore, procedures in addition to AT may be needed for children who have persistent OSA after AT. The palatal plication procedure can be done concurrently with adenotonsillectomy in those children with factors predictive of persistent OSA after AT, such as a severely elevated apnea-hypopnea index and/or a narrow oropharynx.

Methods: A literature review of the Pubmed database was performed using the keywords tonsillar pillar plication, tonsillar pillar suturing, and tonsillar pillar closure resulting in six manuscripts. Three met inclusion criteria. Additionally, we review several cases of patients who underwent pillar plication during AT.

Summary of results: Though adenotonsillectomy alleviates OSA in most children, there are some children who have persistent OSA after AT. Predictors of persistent OSA include a narrow oropharynx in addition to, or instead of, tonsillar hypertrophy. In these patients, sutures can be applied to the tonsillar pillars, approximating the anterior and posterior pillars together. This effectively pulls the palatal pillars laterally as well as anteriorly off the posterior pharyngeal wall, thus resulting in an average increase of 0.4 mm in each dimension.

Conclusions: Palatal plication is an additional procedure, that can be performed at the same time as adenotonsillectomy in select pediatric patients with OSA. It may be used as an adjunct technique in patients who are predicted to have a risk of persistent OSA after AT.

TRACHEOSTOMY FAMILY PREPAREDNESS AND TRACHEOSTOMY-RELATED EMERGENCY ROOM VISITS AND HOSPITAL READMISSIONS

Karen Beaudet

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Background: There is a lack of standardized processes for tracheostomy placement, education and out-patient follow up that can potentially result in family/caregiver dissatisfaction and increased emergency room (ED) visits and hospital readmissions.

Objectives: To reduce ED visits and readmissions of patients with tracheostomy by 10%, and to improve parental/care giver positive survey response by 20%, within 1 year of implementation of a standardized pre-and post tracheostomy management and family/patient education.

Methods: A multidisciplinary continuous quality and practice improvement (CQPI) group was created to design and implement hospital-wide, standardized practice guidelines for tracheostomy placement, family/caregiver education by ENT using a standard flipchart, and regular out-patient follow up by PCP supported by ENT and other subspecialists. Pre-and post-hospital discharge family/caregiver comfort surveys were collected to determine the impact of the standardized approach on parental/caregiver satisfaction. Tracheostomy-related ED visits and hospital readmissions were compared pre- and post-interventions.

Results: Total of 209 children who received tracheostomy over a 3 year period, 129 (PICU) and 80 (NICU) . 188/209 (90%) survived to discharge. Data analysis (n=89) parents/caregivers showed that the most frequent social concern after discharge was the inability to keep home health private duty nursing, followed

by transportation issues and job maintenance. The baseline rate of weekly ED visits/hospital readmission was 3.5 per week . Respiratory infection was the most common tracheostomy-related diagnosis.

Conclusion: Using CQPI methodology, it is anticipated that a hospital-wide standardized approach for tracheostomy placement and parental/caregiver education will improve parental/caregiver satisfaction and decrease tracheostomy-related hospital readmissions and emergency room visits.

LARYNGOTRACHEAL RECONSTRUCTION WITH IMMEDIATE POSTOPERATIVE EXTUBATION: CASE REPORT AND COMMENT ON LITERATURE

Cameron Sheehan

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Purpose: To review the role of immediate postoperative extubation after laryngotracheal reconstruction to prevent iatrogenic complications of prolonged intubation.

Methods: The study design is a case report with review of existing literature on pediatric patients undergoing laryngotracheal reconstruction. The case in this study presented to a tertiary pediatric hospital with a diagnosis of subglottic stenosis treated with surgical reconstruction and extubation in the operating room.

Results: Postoperative intubation after laryngotracheal reconstruction is intended to provide support to the healing graft, however is not without complications. Long term intubation requires sedation to avoid irritation, trauma, and unintentional extubation. Extended sedation with a foreign body in the airway also puts the patient at risk for pulmonary atelectasis, pneumonia, medication withdrawal, and prolonged neuromuscular weakness. Although the lack of postoperative stenting has its own potential complications, our study shows that can be done safely in select cases.

Conclusion: Laryngotracheal reconstruction is the gold-standard treatment for subglottic stenosis. Although the details of the surgical technique are quite consistent from surgeon to surgeon, the postoperative management can be variable. The length of intubation postoperatively is controversial being anywhere between 2-14 days. The literature reviewed and the case presented in this study suggests that this surgical technique without stenting is successful and prevents complications that come with sedation and extended intubation.

FOUR-DIMENSIONAL COMPUTED TOMOGRAPHY (4DCT) FOR THE DIAGNOSIS OF TRACHEOBRONCHOMALACIA (TBM) IN VENTILATOR-DEPENDENT INFANTS

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Background: Bronchoscopy remains the gold standard for diagnosing TBM in infants and children. 4DCT is a non invasive imaging study that can be used to evaluate the airways. Additionally, it can provide a dynamic assessment of the airway function in real time.

Objectives: To assess the diagnostic correlation between bronchoscopy and 4DCT and in the diagnosis of TBM in ventilator-dependent infants with BPD

Methods: A retrospective review of a cohort of consecutive infants with severe BPD suspected to have TBM who have undergone 4DCT. Demographic characteristics, respiratory support at the time of the study and clinical course were correlated with findings from both 4DCT and bronchoscopy.

Results: Total of 9 infants comprised the cohort (1 infant had a follow up evaluation 3 months following the first). Majority of infants (6/9) less than 27 weeks gestation at birth and 7 out of 9 had birth weight less than 1 kg. All 9 infants had severe BPD as the primary diagnosis and all of them were suspected to have TBM . Five out of nine (55%) were found to have TBM by 4DCT; in 4 of these 5 infants (80%) , TBM was confirmed by bronchoscopy. Seven out of the nine infants (77%) received tracheostomy for chronic home ventilation.

Conclusion: There is a reasonably high correlation between 4DCT and bronchoscopy in diagnosing TBM in infants with ventilator-dependent BPD suspected to have TBM. Additional data are being collected to establish true clinical correlation.

INTRANASAL FENTANYL USE ON POSTOPERATIVE EMERGENCE DELIRIUM

Alex Dickerson

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Introduction: The use of short-acting anesthetic agents has stimulated interest in emergence delirium. Though not fully understood, this effect is primarily seen in children ages 2-5 receiving anesthetic agents. Intra-operative pain management may play a role in limiting post-operative delirium. We compare the use of intranasal fentanyl with intranasal saline to see if there is a difference in emergence delirium.

Methods: A prospective, randomized, blinded study was conducted comparing emergence delirium in pediatric patients undergoing myringotomy tube placement. Patients enrolled in the study ranged between 9 months and 4 years of age, given rectal acetaminophen intraoperatively, and randomized to received either intranasal fentanyl at .5 µg/kg, or intranasal saline. Patients were evaluated postoperatively using the Cravero scale at four minute intervals.

Results: A total of 10 patients were enrolled in the study. Patients were evaluated by two pediatric nurse recovery staff in a single outpatient surgery center. Of the 10 patients, 4 were randomized to receive intranasal fentanyl. The score of each of the time intervals was calculated and averaged across a 16 minute time period for both groups. The average score for the fentanyl group was 2.81 compared to 2.92 in the control group.

Conclusion: Thus far no statistically significant difference is seen between the two groups suggesting that the addition of intranasal fentanyl does not change the severity of emergence delirium observed in children. While these findings are preliminary and more data is necessary to draw definitive conclusions, this may assist in post-operative pain management options.

POST-OPERATIVE DIETARY ADVICE AND POST-TONSILLECTOMY HAEMORRHAGE: SYSTEMATIC REVIEW

Miles Bannister (M.D.)

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Introduction

Post-operative dietary advice after tonsillectomy varies. The extent and type of food eaten may affect childrens' post-operative haemorrhage risk. Establishing any association could aid in reducing post-operative mortality, morbidity and healthcare costs. We aimed to review the published literature assessing the effect of childrens' diet on post-tonsillectomy haemorrhage.

Methods

A systematic review of English language articles performed using PubMed in July 2016. Keywords included 'post-tonsillectomy', 'diet', 'dietary advice', 'haemorrhage', 'bleeding', 'paediatric' and 'children'.

Results

One hundred and eighty article abstracts were reviewed. Seven met our inclusion criteria; 2 were excluded as these did not discuss haemorrhage rates. Five articles were included in the final review (4 randomized studies and 1 cohort study), totaling 916 children.

Conclusion

Childrens' immediate diet following tonsillectomy is not associated with later haemorrhage. Later dietary restrictions are associated with increased haemorrhage rates. Parents should provide as much food as possible, of any type, after tonsillectomy.

OPTIFLOW AND PAEDIATRIC AIRWAY SURGERY

Miles Bannister (M.D.)

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Introduction

To date all case series discussing nasal high-flow oxygen (Optiflow™) to achieve a tubeless operative field centre on it's use in adults. We discuss our recent experience with the system in diagnostic and therapeutic paediatric airway surgery.

Methods

Preliminary prospective series of 6 cases.

Results

Optiflow™ has been successfully used to provide a clear operative field for diagnostic bronchoscopy, therapeutic endoscopy and laryngeal surgery. Good paediatric blood oxygen saturations were maintained throughout the surgeries. No anaesthetic or surgical complications occurred either peri-operatively or post-operatively.

Conclusion

Optiflow™ provides safe, maintainable ventilation in both healthy and unwell children, including those with chronic lung disease. It offers a tubeless operative field that improves access to the paediatric airway, providing more space for surgeons to operate in. Crowding at patients' heads can be avoided too. Providing that adequate anaesthetic and airway management experience are in place, we would encourage it's wider use for paediatric airway cases based on our preliminary findings.

RISK FACTOR ANALYSIS FOR 30-DAY READMISSION RATES OF NEWLY TRACHEOSTOMIZED CHILDREN

Jenna Briddell (M.D.)

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Intro:

Pediatric patients undergo tracheostomy for a variety of reasons; however medical complexity is common among these patients. Although tracheostomy may help to facilitate discharge, it may contribute to the need for readmission. The purpose of this study is to evaluate our institutional rate of 30-day readmission for patients discharged with new tracheostomies and to identify readmission risk factors.

Methods:

A retrospective chart review was performed of patients who required readmission within 30 days of discharge from their initial hospitalization in which a tracheostomy was placed. We investigated reasons for readmission, co-morbidities and discharge destination.

Results:

Over 36 months, 45 patients underwent tracheostomy and were subsequently discharged with an overall readmission rate of 31%. Of these 45 patients, 34(75%) were discharged to home, and 12(35%) of these patients required readmission. 11(20%) were discharged to long-term care facilities, and 2(18%) of these patients required readmission. Only 1(2%) patient required readmission

for reasons directly related to tracheostomy. 8(57%) patients were readmitted with lower airway concerns, all with significant co-morbidities. 4(28%) of patients were admitted for other issues unrelated to tracheostomy. 3(21%) patients readmitted from home had documented social or home nursing concerns.

Conclusion:

New pediatric tracheostomy patients are at high risk of readmission, though it is rarely directly related to the tracheostomy and more frequently attributable to co-morbidities. Social and nursing issues were more common among patients discharged to home. Addressing the social issues and nursing support available to these patients may help reduce future readmissions.

MYCOBACTERIUM AVIUM INFECTION PRESENTING AS ENDOBRONCHIAL LESION IN A CHILD

Sweeti Shah

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Atypical mycobacterium infections present most commonly as cervical lymphadenitis in immunocompetent children. The most common organism is *Mycobacterium avium* complex (MAC). There are rare case reports of mediastinal MAC in children and even more rare reports of children with isolated endobronchial lesions. The most common symptom of these patients is a recurring respiratory complaint. These complaints usually consist of wheezing, coughing, or recurrent airway infections that often mimic symptoms of foreign body aspiration. We present a 3 year old immunocompetent male with a chronic cough that failed outpatient therapy. A bronchial lesion occluding the left mainstem bronchus was noted during flexible bronchoscopy. A CT chest with contrast revealed only an isolated endobronchial lesion in the left mainstem bronchus. Biopsy and CO₂ laser reduction of the mass was performed. Biopsy results showed granulomas without necrosis but ultimately revealed MAC infection with polymerase chain reaction (PCR) and cultures. The patient was treated with triple antibiotic therapy of azithromycin, ethambutol and rifampin for six months. There are currently no treatment guidelines for this rare presentation and patient population. We demonstrate a successful combination of laser excision and triple therapy for a young healthy child with an isolated endobronchial MAC lesion.

BILATERAL SUBMANDIBULAR GLAND AGENESIS: A CASE REPORT AND REVIEW OF THE LITERATURE

Guanning Nina Lu (M.D.)

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Aplasia of the major salivary glands is a rare disease with a limited number of cases reported in the literature. Bilateral aplasia of the submandibular glands is an even more rare occurrence. We document the case of a 16 year old patient with incidental bilateral submandibular gland aplasia discovered during the work-up and treatment of a parotid gland malignancy. Bilateral submandibular gland aplasia cases can be easily overlooked on imaging due to its symmetric nature. Subspecialty Radiology consultation can be helpful in this regard. Surgeons should keep this condition in mind when encountering unusual anatomy within the submandibular triangle.

SYNTHETIC MARIJUANA USE CAUSING CANNABINOID HYPEREMESIS SYNDROME AND BOERHAAVE SYNDROME: A CASE REPORT

Jo-Lawrence Martinez Bigcas (M.D.)

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Objective: Cannabinoid hyperemesis syndrome (CHS) was first described in 2004 as cannabis abuse, cyclic nausea and vomiting, and resolution with cessation of cannabis. "Kush," a synthetic subset of marijuana, is poorly understood with a constant influx of new formulations hitting the market. We describe the case of a 17-year-old male with Boerhaave syndrome secondary to CHS from synthetic marijuana use.

Method: Case report and literature review

Results: A 17-year old previously healthy male presented with dehydration, nausea, and vomiting after smoking synthetic marijuana. The patient had 30 episodes of bloody and non-bloody emesis with subsequent dysphagia and chest pain. Computed tomography of the chest showed pneumomediastinum with air tracking to the supraglottic soft tissue. Pyriform sinus perforation was seen on barium esophagram. Laryngoscopy revealed no obvious injury. The patient was managed conservatively with antibiotics and NPO status. He was subsequently advanced to regular diet and had no further issues.

Conclusion: There are multiple case reports that have correlated CHS to synthetic marijuana use. Boerhaave syndrome is rare, especially in an adolescent male. Reliance on the "classic" presentation may be misleading. As there is a direct correlation between the time to treatment and potentially devastating morbidity associated with this syndrome, a high clinical suspicion and awareness of unusual clinical features is vital. We suspect a combination of factors was necessary to generate sufficient barotrauma within the esophagus as seen in this case.

CERVICAL ARTERIOVENOUS FISTULA IN AN INFANT: CASE REPORT WITH LITERATURE REVIEW

Aaron Domack

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Objectives:

1. Present a two-month-old with a congenital arteriovenous fistula (AVF) complicated by intracranial hemorrhage and managed with staged embolization and surgical excision.
2. Discuss literature review of similar cases of AVF.

Methods:

Case report with literature review.

Results:

A two-month-old presented with a fluctuating, cystic neck mass. Prior to imaging, the patient was admitted at five months with altered mental status, emesis, and hydrocephalus with a large intraventricular and intraparenchymal hemorrhage. MRI demonstrated a large cervical AVF fed by the thyrocervical trunk and right external carotid artery. The AVF drained into a large varix formation draining into the brachiocephalic and right internal jugular vein.

Following placement of a ventricular peritoneal shunt, AVF was embolized twice using multiple coils and embolic glue. This was complicated with right vocal cord paresis and pulmonary embolization of glue. Angiography on hospital day 20 demonstrated complete closure of the AVF.

At 11 months, the AVF was resected with demonstration of coil extruding from the AVF adjacent to the common carotid with inflammatory scarring of the vagus nerve. Vocal cord function returned 11 months post embolization.

Literature review confirmed this to be a unique case; however, other cases of carotid-jugular, cerebral, and paraspinal AVM described a similar treatment strategy.

Conclusion: Congenital cervical AVF may be associated with complications of intracranial bleeding. Early diagnosis is important in order to stabilize the AVF by embolization. Definitive excision is required to resect disease and remove extruding coils.

CONSIDERATIONS FOR COCHLEAR IMPLANT CANDIDACY IN CHILDREN WITH CHARGE SYNDROME

Ashleigh Lewkowitz

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This study examines considerations needed when determining appropriate candidacy for cochlear implantation in pediatric patients with CHARGE syndrome. Although cochlear implantation may be successful in some cases, children with CHARGE syndrome are not straightforward cochlear implant candidates given the abnormal anatomy, neurological complexity, and behavioral challenges associated with this condition. Retrospective analysis of medical records at a tertiary care pediatric hospital for 12 children diagnosed with CHARGE syndrome was conducted; some children received implants (n=3), while others were evaluated for candidacy and were not implanted (n=9). This study explores the considerations employed by the cochlear implant team in deciding for or against implanting children with CHARGE who, based on audiometric thresholds alone, met criteria for cochlear implantation. Surgical, audiologic, and behavioral implications of the CHARGE diagnosis are discussed and recommendations offered for future management of children with CHARGE syndrome.

UNILATERAL VOCAL FOLD PARALYSIS AND SPINAL ACCESSORY NERVE PALSY IN A NEONATE: A CASE REPORT AND REVIEW OF THE LITERATURE

Elton M Lambert (M.D.)

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Vocal fold paralysis occurs as a result of injury to the recurrent laryngeal nerve. Causes of vocal fold paralysis in a neonate include iatrogenic injury, neurologic disease, birth trauma and idiopathic vocal fold paralysis. Idiopathic vocal fold paralysis occurs in approximately one-third of all children with vocal fold paralysis. Most cases of vocal fold paralysis resolve with conservative management. There have been no previously described cases of idiopathic cranial nerve eleven palsy. This case report describes a case of idiopathic vocal fold paralysis and cranial nerve eleven palsy in a neonate and its management, with a review of the literature.

DELAYED PRESENTATION OF NASAL SEPTAL ABSCESS FOLLOWING INFECTIOUS MONONUCLEOSIS AND ACUTE BACTERIAL SINUSITIS: A CASE REPORT

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Introduction: Infectious mononucleosis is rarely accompanied by otolaryngologic complications. Additionally, it is much less common for a nasal septal abscess to develop following sinusitis than it is following nasal trauma. We report a unique case where a pediatric patient developed acute bacterial sinusitis and a nasal septal abscess following an episode of infectious mononucleosis. This case is unique in that no other cases of infectious mononucleosis with development of bacterial sinusitis and nasal septal abscess could be found.

Case presentation: A 16-year-old otherwise healthy Caucasian female presented with infectious mononucleosis and subsequently developed acute bacterial sinusitis. She then developed persistent nasal pain, nasal obstruction, and a bulging nasal septum consistent with a nasal septal abscess. Emergent incision and drainage with evacuation of the abscess followed by systemic antibiotics and delayed rhinoplasty for cosmetic reconstruction were required in her management.

Conclusion: This case shows that even in the absence of trauma, nasal septal abscess must be considered in patients presenting with persistent nasal pain, obstruction and congestion. This case also lends evidence to the idea that infectious mononucleosis can leave a patient more susceptible to bacterial superinfection via inflammatory immune modulation as suggested in the literature.

HEARING-LOSS-RELATED ISSUES AFFECTING QOL IN PRESCHOOL CHILDREN: QUALITATIVE ANALYSIS OF FOCUS GROUPS

Miranda Lindburg

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Introduction

Quality of life (QOL) is an important measure of overall well-being that is affected by hearing loss (HL). Disease-specific tools of QOL are more sensitive and better quantify clinical changes than generic measures, and self-report of QOL is crucial even in young children.

Methods

This qualitative study utilized focus groups comprised of children age 5-7 years old with HL, parents of children 2-7 years old with HL, and professionals who interact with these children. Focus groups were moderated using questions concerning HL and QOL, video and audio recorded, and transcribed verbatim. Narrative analysis was utilized to extract common themes.

Results

10 professionals, 12 parents, and 6 children participated in the focus groups. Thematic analysis of the transcriptions revealed that a number of topics were common across the focus groups for how HL affects young children. These topics could be grouped into categories: Feelings, Behavior, Environments, Social/Activities, Family, and Hearing Equipment. Themes extracted from the child focus groups aligned well with those from parent and professional groups. Quotes illustrating issues under these headings will be presented.

Conclusion

These extracted concepts will be used to create a QOL questionnaire for young children. In addition, these focus groups served as an important proof-of-concept that children with HL in this age range were not only able to report issues that bothered them about their HL when asked, but that the content of their reports correlated well with that of the professional and parental focus groups.

THE NEED FOR ESOPHAGRAM IN THE WORKUP OF PEDIATRIC PNEUMOMEDIASTINUM

G. Zachary White

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Objective: To investigate the need for esophagram in stable patients diagnosed with pneumomediastinum due to blunt trauma or spontaneous origin.

Background: Pneumomediastinum is a rare entity in the pediatric population. It is caused by increased intrathoracic pressure resulting in alveolar rupture and tracking along the tracheobronchial tree. Most commonly, pneumomediastinum occurs spontaneously or as a result of trauma. Traditionally, this diagnosis is often associated with an extensive workup and increased length of stay.

Methods: A retrospective chart review was performed on 124 children diagnosed with pneumomediastinum at our tertiary care hospital between 2000 and 2014.

Results: One hundred and ten patients met inclusion criteria. Patients were excluded if they were initially unstable or had pneumomediastinum due to penetrating trauma. Eighty-five patients were diagnosed with spontaneous pneumomediastinum and 25 had pneumomediastinum due to blunt trauma. Thirty patients underwent esophagram as part of the workup for their pneumomediastinum while 80 had no esophagram performed. Only one patient undergoing esophagram was found to have an esophageal perforation. This was due to a broom stick striking the oropharynx. This patient was managed

conservatively. Two patients who did not undergo esophagram needed intervention for their pneumomediastinum. One patient, who was injured in a bicycle accident, required endoscopy and open intervention while the second patient, injured in an ATV accident, required only endoscopic intervention.

Conclusion: Pneumomediastinum is a rare but potentially life threatening diagnosis. In stable patients diagnosed with pneumomediastinum due to spontaneous origin or blunt trauma, esophagram does not accurately identify patients needing surgical intervention.

CONGENITAL MANDIBULAR MASS: A CASE REPORT

Karin Hotchkiss (M.D.)

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Introduction: Congenital oral cavity masses are an uncommon finding. When present, they often interfere with feeding or breathing in the neonate. We present a case of a newborn with a midline mandibular gingival lesion and discuss differential diagnosis and management options for congenital gingival lesions.

Case report: A term newborn was found on initial examination to have a 1.5cm midline mandibular lesion at the alveolar ridge. Concerns persisted that the lesion was interfering with the child's ability to latch with nursing. Initial suspicion was for a congenital epulis. The lesion was small and not affecting breathing but certainly affecting feeding/latch and decision was made for surgical intervention. Intraoperatively, the child was found to have unerupted neonatal teeth. The teeth were extracted/excised and gingiva sutured closed. The infant had immediate improvement in latch, feeding, and weight gain.

Methods: Review of the literature to assist in differential diagnosis and treatment recommendations for management of congenital oral lesions and neonatal teeth in the newborn patient.

Conclusion: Congenital alveolar lesions are uncommon with a reported incidence from 1:1,100 to 1:10,000 births. While both an epulis and natal teeth have a higher incidence in female patients, a congenital epulis tends to be more common on the maxilla while neonatal teeth are more commonly found on the mandible. Both are treated with surgical excision when feeding problems arise. This case is unique as the neonatal teeth were unerupted and the reactive gingiva led the appearance of another type of benign oral cavity lesion.

POSTOPERATIVE SIALADENITIS COMPLICATED BY BILATERAL TAPIA'S SYNDROME: A CASE REPORT AND REVIEW OF THE LITERATURE

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Purpose:

To present a case of a young female patient who experienced two rare post-operative complications: "anesthesia mumps" leading to airway compromise, and bilateral Tapia's syndrome. This is the first reported case where both of these complications occurred in the same patient simultaneously.

Methods:

A case report and literature review was performed for post-operative sialadenitis (anesthesia mumps) leading to airway compromise, as well as recurrent laryngeal and hypoglossal nerve paralysis (Tapia's syndrome) following intubation.

Summary:

We report a case of a 13-year-old female who underwent a suboccipital craniotomy for a brainstem tumor resection. While recovering post-operatively, she developed acute submandibular gland swelling, massive lingual edema, and airway compromise and was emergently intubated. Following extubation she was identified to have bilateral hypoglossal and recurrent laryngeal nerve paralysis. We intend to review her management and discuss the morbidity associated with these complications as well as proposed pathophysiology and expected outcome. Additionally, we will discuss what little is known about these diseases in the literature and we hope to add to the knowledge of the readers about these rare conditions.

OUTPATIENT MANAGEMENT OF PEDIATRIC PERIORBITAL CELLULITIS

Ashley Tritt

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INTRODUCTION: The traditional treatment for periorbital cellulitis consists of hospitalization for intravenous antibiotherapy. Outpatient parenteral management of bacterial infections is a cheaper and convenient alternative that has been shown to be as effective as admission in other conditions. Our objective was to evaluate whether in children diagnosed with periorbital cellulitis, daily administration of intravenous antibiotics via an outpatient setting is safe and as effective as inpatient treatment.

METHODS: A retrospective case series of all children treated for periorbital cellulitis at a tertiary children's hospital between 2013-2015 was performed. Children were divided into inpatient and outpatient treatment groups based on the assessment by the emergency physician and the medical day hospital pediatrician.

RESULTS: There were a total of 27 inpatients and 101 outpatients treated with daily intravenous antibiotics via the medical day hospital. Four of 99 outpatients were admitted following failure of treatment or development of complications. All twelve patients with complicated periorbital cellulitis on presentation were admitted. Four of 99 (4.0%) patients treated at medical day hospital developed complications during treatment; one child required admission for antibiotherapy for a phlegmon, two children required a second course of intravenous antibiotics for persistent cellulitis and one child developed an eyelid abscess. The mean duration of intravenous antibiotherapy was respectively 18.8 and 11.5 days for inpatients and outpatients ($p < 0.01$) and mean duration of admission was 4.0 days.

CONCLUSIONS: Outpatient parental therapy is an effective alternative to inpatient admission for selected cases of uncomplicated periorbital cellulitis and does not lead to increased complication rates.

COBLATION OF SUPRASTOMAL GRANULOMAS IN TRACHEOSTOMY-DEPENDENT PEDIATRIC PATIENTS

C. Scott Brown (M.D.)

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Objective: Suprastomal granulomas pose a persistent challenge for tracheostomy-dependent children. They can prevent phonation, cause difficulty with tracheostomy tube changes and prevent decannulation. We describe the use of the coblator (controlled ablation) for radiofrequency plasma ablation of suprastomal granulomas in 5 consecutive children from September 2012 to January 2016.

Method: Retrospective case series at a tertiary medical center

Results: The suprastomal granuloma could be removed with the coblator in all 5 cases. Three were removed entirely endoscopically and two required additional external approach through the tracheal stoma for complete removal. There were no intraoperative or postoperative complications. One patient was subsequently decannulated and two patients have improved tolerance of their speaking valves. Two patients remain ventilator dependent, but their bleeding and difficulty with tracheostomy tube changes resolved. Three of the patients have had subsequent re-evaluation with tracheoscopy demonstrating resolution or decreased size of the granuloma. This technique is time efficient, simple, and minimizes risks associated with other techniques. The relatively low temperature reached by the coblator device decreases the risk of airway fires and hypoxia from keeping a low oxygen level to prevent fire during the procedure. The concurrent suction in the device decreases blood and tissue displacement into the distal airway.

Conclusion: Coblation can be used safely and effectively with an endoscopic or external approach to remove suprastomal granulomas in tracheostomy-dependent children. More and larger studies are needed to evaluate the use of this technique.

SCHWANNOMA ARISING FROM THE NASAL SEPTUM: A RARE CASE REPORT AND LITERATURE REVIEW

Ryan Gerritsen (M.D.)

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Schwannomas are benign primary tumors of the Schwann cells of the nerve sheath, and are known to occur throughout the body. Here we present a unique case of a schwannoma arising from the nasal septum in a healthy 16-year-old male. The patient had approximately two months of left-sided nasal obstruction after sustaining a lacrosse injury to the nose. Imaging revealed a nonspecific soft tissue mass, which after nasal endoscopy and excision was revealed to be a schwannoma. We discuss our results, and review the characteristics of this case with the handful of other case reports regarding this unusual location.

PEDIATRIC LARYNGEAL CLEFT REPAIR AND DYSPHAGIA

Aileen Wertz (M.D.)

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Objective: To describe changes in diet and swallow function in patients with a laryngeal cleft after surgical repair of the laryngeal cleft.

Methods: Retrospective case series performed using chart review. Primary outcomes were diet and swallow function before and after laryngeal cleft repair. Clinical evaluation and video fluoroscopic swallow studies (VFSS) were used to assess pre and post intervention swallowing.

Results: 16 pediatric patients were included in this study. Preoperatively, 14 (88%) of them had diet restrictions. Postoperatively, 12 (75%) patients took a regular diet without limitation. 4 (25%) patients had no reduction in diet restrictions over the course of this study. For the 10 patients who transitioned to a regular diet postoperatively, it took a median of 300 days (range: 26 days - 3 years) to achieve a regular diet. This was corroborated by an increase in normal oral and pharyngeal phase swallow function on VFSS postoperatively when compared with preoperative VFSS results.

Conclusion: Dysphagia improves in a majority of patients after laryngeal cleft repair. The range in duration to normal diet was wide. This may allow for improved preoperative counseling and preparation of families for improved expectations.

SURGICAL OUTCOMES IN CHILDREN WITH VELOPHARYNGEAL INSUFFICIENCY AND APRAXIA

Andre M. Wineland (M.D.)

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Objectives:

Evaluation and management of velopharyngeal insufficiency (VPI) in children with apraxia is controversial. The objectives of this study are to: 1. Describe the clinical findings in children with VPI and apraxia. 2. Assess the outcomes of surgical intervention in this population.

Methods:

Retrospective review of all children seen from January 2010 to December 2015 in the Velopharyngeal Insufficiency Clinic at a tertiary pediatric center. Patients with hypernasal speech and apraxia who had pre- and post-treatment evaluations were included. Perceptual evaluation, nasometry, and nasopharyngoscopy were captured. Descriptive statistics were performed.

Results:

14 patients (11 male) were included with complete nasometry data available on nine. Average age at initial assessment was five years (range 3-7.5). Six patients had velocardiofacial syndrome, one had a submucosal cleft, and six had a history of adenoidectomy. Pre-operative median oral nasalance was 60% (range 40-75%; normal <25%). Ninety-three percent (13/14) underwent at least one surgical procedure. Five patients underwent a revision surgical procedure. Overall, oral nasalance scores decreased in 75% of patients (9/12), with an average decrease

of 17% (range -18 to 44%). Nine patients had pre- and post-operative nasopharyngoscopy. Velopharyngeal gap size decreased in 66% (6/9). Eighty-six percent (12/14) of caregivers reported increased intelligibility after treatment. One patient experienced a flap dehiscence. Two patients experienced post-operatively obstructive sleep apnea requiring velopharyngeal port revision.

Conclusion:

Pediatric patients with VPI and apraxia should be evaluated by a multidisciplinary team. Surgical intervention resulted in increased intelligibility, reduced nasalance for oral sounds, and improved velopharyngeal closure in this patient population.

LOBULAR CAPILLARY HEMANGIOMA OF THE TEMPORAL BONE IN CHILDREN: CLINICAL AND PATHOLOGICAL CHARACTERISTICS IN THREE CASES

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Background: Lobular capillary hemangioma (LCH), otherwise known as pyogenic granuloma, is a benign vascular tumor of unknown origin. Typically involving the skin and oropharyngeal mucosa, LCH is characterized by friability with a propensity for hemorrhage. We report the clinical, radiological, histological and molecular characteristics of LCH involving the middle ear space in three children.

Materials and methods: Three patients (ages 9-14 years; 2 males and 1 female) presented with recurrent right otitis media, right facial paralysis and hearing loss, and left otalgia respectively. MRIs revealed a lobulated mass hyperintense on T1, T2 with avid enhancement involving the temporal bone. Hybrid arterial embolization and transmastoid resection was employed in one patient. Intraoperatively, the tumor eroded the tegmen, ossicles, and tympanic segment of the Fallopian canal from the first to second genu.

Results: In each case, light microscopy showed capillaries lined with plump endothelium and pericytes. A certain disarray of endothelial cells was noted without atypia. Endothelial cells were positive for CD31 and negative for Glut-1. The histomorphology and immunoprofile were consistent with LCH. Given that LCH of the middle ear was not previously reported, confirmatory molecular studies were performed on patients 2 and 3. In both cases, the tumor showed activating RAS mutations including NRAS confirming the diagnosis of LCH.

Conclusion: We describe in the first three cases of LCH of the middle ear in children. LCH should be considered in the differential diagnosis of pediatric tumors involving the middle ear.