



Canadian Society of Otolaryngology-Head and Neck Surgery

74th ANNUAL MEETING (Virtual)
September 26 – November 14, 2020
“Quality and Excellence in Otolaryngology-Head and Neck Surgery”

Saturday October 24, 2020 @ 12:05 p.m.

Laryngology - Moderator Dr. Andrea Darnbrough

12:50 p.m. - 12:55 p.m. ***Blue Light Laser Results in Less Vocal Fold Scarring Compared to KTP Laser In Normal Rat Vocal Folds - J.L. Lin, Toronto, ON***

Learning Objectives

By the end of the presentation, the participants will be able to: 1. Discuss the impact of blue light laser and KTP laser on normal rat vocal folds 2. Compare the blue light laser and KTP laser on normal rat vocal folds in terms of vocal cord scarring

Abstract

Background: Preliminary investigations suggest that a novel blue light (BL) laser with a wavelength of 445nm is comparable to the commonly utilized KTP laser (532nm) for treatment of laryngeal pathologies. However, there is no direct histological comparison of the scarring effect between the two lasers on vocal fold tissue. **Objectives:** To compare the degree of vocal fold scarring induced by either BL or KTP laser treatment in a rat model. **Methods:** Twenty-four Sprague-Dawley rats were randomized to BL or KTP laser treatment. Laser was delivered in non-overlapping pulses to normal rat vocal folds. Larynges were harvested at three time points: post-operative day (POD) 1, 30, and 90. Three animals served as negative controls. Total larynges with vocal folds were sectioned transversely and stained with H&E and trichrome. Comparisons in subepithelial inflammation and protein deposition indicative of scarring were scored semi-quantitatively from 1 to 3 by two pathologists blinded to treatment groups. **Results:** Between-group comparison showed that both lasers resulted in significantly elevated subepithelial protein deposition on POD 90 compared to negative controls (BL: 2 ± 0 ; KTP: 2.67 ± 0.29 ; Control: 1.17 ± 0.29 ; $p < 0.05$). However, the degree of protein deposition was significantly higher in the KTP group compared to the BL group ($p=0.005$). Within-group comparison showed that the KTP group showed evidence of fibrosis as early as POD 30, which was not observed in the BL group. **Conclusions:** The degree of scarring is significantly less after BL laser treatment compared to KTP in normal rat vocal fold tissue. Future clinical studies are warranted.

12:55 p.m. - 01:00 p.m. ***Incidence and Prevalence of Subglottic Stenosis in Alberta – R. Chan, P. MacEachern, G. Gelfand, J.D. Bosch, D. Randall, Calgary, AB***

Learning Objectives

By participating in this presentation, medical students will be able to describe the types of SGS and their related epidemiological characteristics. By attending this presentation, physicians are promoted to speculate what epidemiological factors might be contributing to the increase in prevalence of SGS, specifically idiopathic SGS. Following this presentation, participants will be able to identify key demographic factors common amongst patients with SGS in southern Alberta and encouraged to compare this to local populations.

Abstract

OBJECTIVES: Subglottic stenosis (SGS) is narrowing of the larynx immediately below the vocal folds that can cause stridor, progressive dyspnea, and potential life-threatening airway obstruction. The most common SGS subtypes are traumatic and idiopathic, depending on the centre, with the latter becoming more common in recent publications with a reported prevalence of 1:400,000. The pathogenesis of idiopathic SGS (iSGS) is still unknown; high recurrence rates require repeated surgical interventions. Recognizing the factors contributing to iSGS is important in understanding this serious, uncommon condition. **METHODS:** At our tertiary voice and airway centre, we undertook a retrospective chart review to compare our population features of patients with SGS from 2010 to current. The etiology, diagnosis date, and supporting demographic information for SGS patients were obtained. **RESULTS:** We identified 223 SGS patients (90% female), with 92.5% residing in southern Alberta. This represents an overall point prevalence of 12:100,000 people. The primary SGS subtype was idiopathic (81.6%), while

autoimmune (6.9%), iatrogenic (5.7%), congenital (2.8%), and traumatic (1.2%) were minor contributors. Point prevalence of iSGS (n=182, 96% female) was 10:100,000 people, with the mean age at diagnosis of 48.3 (SD±13.6) years old and an annual incidence of 0.53/100,000. CONCLUSION: We identified a very high prevalence of SGS in southern Alberta, mainly due to iSGS that was 40-fold higher than the reported rates in other major centres. We suspect there are unrecognized pathogenic factors involved. Further investigation into this population may contain information relevant to the pathophysiology and therapeutic options for SGS.

01:00 p.m. - 01:05 p.m.

In-Office Endoscopic KTP Laser Ablation of RRP: Just How Painful Is It? – P. Douglas-Jones, J. Anderson, R.J. Lin, T. Davids, Toronto, ON

Learning Objectives

By the end of this session, otolaryngologists should be able to better engage patients in the shared and informed decision-making process when it comes to the surgical management of RRP

Abstract

Introduction: In-office endoscopic laryngeal procedures have become an established management option for various laryngeal pathologies and have been shown to be safe, cost-effective and well tolerated, offering many advantages over traditional surgery. However, due to the heterogeneity of existing data, it remains difficult to quantify pain associated with in-office KTP laser ablation (IOKTP) of recurrent respiratory papillomas (RRP). We investigate pain in this context and explore potential patient and procedural factors as predictors of pain reported.

Methods: A retrospective audit of all patients undergoing IOKTP of RRP at St. Michael's Hospital (Toronto, Ontario) between January 2018 and November 2019 was performed. Procedure details were recorded prospectively on a standardized IOKTP checklist/flowchart. Pain experienced during the procedure was recorded on a numeric pain rating scale (0-10). **Results:** Three surgeons performed 137 procedures on 84 patients. Average pain score was 2.99 +/- 2.59 out of 10. Mean total local anesthetic dose was 175.41 +/- 53.99mg lidocaine. Mean laser duration was 4.96 +/- 2.62 minutes. Multivariate regression analysis showed that neither age (p = 0.196), gender (p=0.583), total local anesthetic dosage (p = 0.759) nor laser time (p = 0.385) were independent predictors of pain. **Conclusion:** IOKTP laser ablation of RRP is associated with mild to moderate pain. Further studies are required to determine how this compares to pain following traditional surgery.

01:05 p.m. - 01:10 p.m.

Discussion

01:10 p.m. - 01:15 p.m.

Radiographic Features Correlated with Dysphagia Severity in Zenker's Diverticulum – D. Randall, R. Hanna, Calgary, AB

Learning Objectives

1.The student should be able to describe the pathophysiology leading to formation of a Zenker's diverticulum and its associated symptoms. 2.The resident should be able to describe the radiologic anatomy in Zenker's diverticulum. 3.The practicing otolaryngologist should be able to able to evaluate the severity of swallowing dysfunction in Zenker's diverticulum and the efficacy of treatment.

Abstract

Introduction: Considerable variability in swallowing disability occurs in patients with Zenker's diverticulum (ZD). We sought to evaluate the impact of several anatomic structures involved in swallowing identifiable on radiographic studies and correlate them to the severity of swallowing impairment perceived by patients with ZD. **Methods:** Retrospective case series of patients undergoing video fluoroscopic swallowing studies (VFSS) for Zenker's diverticulum at a tertiary dysphagia centre. Anatomic parameters identified on VFSS of patients with ZD were correlated with subjective perception of swallowing using Eating Assessment Tool (EAT-10) scores. Upper esophageal sphincter (UES) diameter at the point of maximal distention, area of diverticulum on the lateral view, height of the diverticulum and the entrance angle of esophagus were measured.

Results: We identified 24 patients with ZD (61.1% male, mean age=72.2 years). Narrow UES diameter was significantly correlated with dysphagia severity (r=-0.5647, p=0.0283). Largest area of diverticulum (r=-0.1449, p=0.7234), diverticulum height (r=-0.1040, p=0.7234), and esophageal entrance angle (r=-0.1040, p=0.7234) were not correlated with EAT-10 scores. **Conclusion:** UES sphincter diameter was predictive of severity of swallowing dysfunction in patients with ZD. Size of ZD and the angle of bolus entry in patients with ZD are not predictive of swallowing dysfunction. Understanding the predictors of swallowing dysfunction will assist in counselling patients on postoperative expectations.

01:15 p.m. - 01:20 p.m.

What Every Canadian Otolaryngologist Should Know About Workplace Accommodations for Voice Disorders: A Narrative Review - L. Allen, A. Hu, Vancouver, BC

Learning Objectives

1. By the end of this session, the practicing otolaryngologist will be able to describe the Canadian legislation governing workplace accommodation and disability, with a specific focus on voice disorders 2. By the end of this session, the practicing otolaryngologist will be able to list some practical workplace accommodations for patients with voice disorders.

Abstract

Background & Objective - Several Canadian legislative acts govern workplace accommodations for individuals with disability. The Otolaryngologist's role in advocating for individuals with voice disorders in the workplace is not well defined in the literature. Patients who are professional voice users depend on their voice for their jobs and careers. Our objective is to review the English literature on workplace accommodations for voice disorders and to describe how Canadian legislature governing disability guides the Otolaryngologist in practice. **Methods** - Canadian legislation governing workplace accommodation and disability is summarized with a specific focus on voice disorders. A combination of the terms "voice disorder", "dysphonia", "workplace", "laryngology", "accommodation", "disability", and "otolaryngology" were searched on PubMed, Google Scholar, and CanLii databases from 1984-present. A practical guide to reasonable accommodations for voice disorders in the workplace is discussed in the context of Canadian legislature. **Results** – Forty-eight unique publications were identified in the literature. Thirty-nine studies were eliminated for irrelevance or duplication between databases. Nine studies were reviewed. Themes of common voice disorders and their workplace implications were identified. Accommodations included voice amplification, use-reduction strategies, job modification, work-hour flexibility, and protected time as medically required. The professional, legal, and ethical roles of Otolaryngologists in facilitating these accommodations were discussed. **Conclusions** - A multitude of voice disorders exist with varying pathologies, severities, types of associated disability, and impact on the individual's workplace. Physicians have legal and ethical obligations to advocate for their patients and play a unique role in identifying disability and defining necessary accommodations.

01:20 p.m. - 01:25 p.m.

Discussion