Pan Arab Rhinology Society
PARS Reader's Digest

Reader Digest

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Introduction

This newsletter is intended to provide information that is useful to the student and specialist in the field of rhinology and allergic disorders.

The selected recent material represents important fundamental knowledge, current trends or recent developments in this field.

We hope that this newsletter will help the reader have a greater understanding of rhinology and allergic disorders

1. Choanal Atresia

Claudio Andaloro, Ignazio La Mantia

Excerpt

Choanal atresia is a congenital disorder in which the nasal choanae, (i.e., paired openings that connect the nasal cavity with the nasopharynx), are occluded by soft tissue (membranous), bone, or a combination of both, due to failed recanalization of the nasal fossae during fetal development. If unilateral, it presents with unilateral mucopurulent discharge. If bilateral, the neonate is unable to breathe. Since newborns are obligate nasal breathers, establishing an airway is an acute otolaryngologic emergency.

In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan–.2019 Oct 3

2. Diagnostic Evaluation of Chronic Nasal Obstruction Based on Nasal Endoscopy and CT Scan Paranasal Sinus

Aparna Chavan, Rakesh Maran, Kapil Meenacollapse

Abstract

Evaluation of the accuracy of objective diagnostic modalities for nasal obstruction and their comparison to each other to reach the correct diagnosis with minimum cost and highest accuracy. This study was conducted in the Department of Otorhinolaryngology and Head Neck Surgery, Chirayu Medical College and Hospital, Bhopal from August 2016 to September 2017. A total of 50 patients from age group 1-70 years irrespective of sex with complaints of chronic

nasal obstruction, which were unresponsive to routine appropriate medical therapy, were selected for this study. Comparative study among findings of nasal endoscopy and CT scan of the paranasal sinuses done. After clinical examination, patients were subjected to high resolution computed tomography (HRCT) of paranasal sinuses and diagnostic nasal endoscopy (DNE). The diagnostic results of both modalities were compared. The most common symptoms were nasal obstruction and nasal discharge 100%, followed by post nasal drip 62%. The complaints related to eye and ears were less frequent, found in 4% only. CRS (Chronic Rhinosinusitis) was most common pathology of nose for nasal obstruction which is in 72% cases. Sinonasal polyp is present in 20% of cases. Inverted papilloma in 4% cases. Granulomatous disease (Rhinosporidiosis) in 2% cases. Malignancy in 2% cases. In this series of 50 cases, nasal endoscopy revealed various pathological abnormalities mainly in the osteomeatal area. These include mucopurulent discharge in middle meatus seen in 100% of cases (50 patients). This could not be revealed in HRCT. Oedematous and polypoid infundibular mucosa/polyp in nasal cavity in 28% cases (14 patients) where it was not diagnosed in HRCT in three patients. Hence DNE proved superior to HRCT. Other abnormalities detected on nasal endoscopy were septal deviation 80% of cases (40 patients), inferior turbinate hypertrophy 66% of cases (33 patients), middle turbinate hypertrophy/concha bullosa in 48% of cases (24 patients). DNS was diagnosed in 42 patients in HRCT other causes of nasal obstruction such as Agar nasi cell is detected in 16% (8 patients), medialised uncinate process in 16% (8 patients), paradoxical MT in 30% cases were diagnosed more accurately in nasal endoscopy than HRCT. So nasal endoscopy proved better than CT scan. Nasal obstruction is the most common presenting complaint in day to day otolaryngology practice. Nobody would disagree with the role of CT scan and diagnostic nasal endoscopy in diagnosing the nasal and paranasal pathologies. But as a treating physician we are always concerned about early diagnosis and cost effectiveness. At the same time we also have to consider about patient waiting and work load. In this study we attempted to find out whether diagnostic nasal endoscopy can be better then CT scan, so that we can treat our patient appropriately. Though there has been an increased demand for imaging the paranasal sinuses with coronal CT because of functional endoscopic sinus surgery, nasal endoscopy is a better option in diagnosing and assessing the extent of disease and anatomy.

Indian J Otolaryngol Head Neck Surg, 71 (Suppl 3), 1948-1952 Nov 2019

3. Nasal Fractures: The Role of Primary Reduction and Secondary Revision

Weitao Wang, Thomas Lee ... Yadranko Ducciccollapse

Abstract

The nasal bones are among the most commonly fractured bones in the facial skeleton. Proper management of nasal trauma acutely is important in minimizing secondary deformities

and impaired function with nasal airway obstruction. Septal hematoma, if present, should be drained right away. Acutely closed nasal reduction and limited septoplasty can be performed. Unrecognized septal fracture may play a role in the failure of closed nasal reduction of fractured nasal bones. Complex nasoorbitoethmoid fractures are approached openly and treated with rigid fixation. Primary use of open rhinoplasty in an acute setting is debated, and there are no clearly accepted indications for timing, patient selection, and surgical technique. However, open septorhinoplasty is more commonly used in a delayed fashion to provide definitive correction of any residual cosmetic or functional problems. Recent algorithms provide a systematic approach to nasal trauma and may improve secondary deformity rates following closed reduction.

Facial Plast Surg, 35 (6), 590-601 Dec 2019

4. Safety and Efficacy of Sphenopalatine Artery Ligation in Recalcitrant Pediatric Epistaxis

Alexandra D D'Oto, Steven Cox ... Anthony Sheyncollapse

Abstract
Background:

Epistaxis is a common cause for emergency department visits for both children and adults. In particular, posterior bleeds can be difficult to identify and treat. In adults, endoscopic sphenopalatine artery (SPA) ligation has been shown to be safe, cost-effective, and curative. Conversely, very few studies have delved into the safety and efficacy of SPA ligation in children. This study aims to evaluate the feasibility of SPA ligation for treatment of recalcitrant epistaxis in children.

Methods:

A retrospective analysis of outcomes in pediatric patients who underwent SPA ligation at a tertiary academic center was performed. Patients with coagulopathies or other underlying conditions were excluded from the study.

Results:

Data obtained from 5 patients demonstrated 60% of the population were female, with ages ranging from 2 to 13 years. 7 SPA ligations were performed among the 5 patients, with 3 undergoing unilateral SPA ligation only. The remaining 4 underwent contralateral SPA ligation subsequently. No postoperative complications were observed, and all patients experienced resolution of significant epistaxis.

Conclusion:

Although additional studies are necessary to further support our findings, SPA ligation in the pediatric population appears to be a safe and effective treatment to control persistent posterior bleeds.

Int J Pediatr Otorhinolaryngol, 123, 128-131 Aug 2019

5. Benefits of Influenza Vaccination on the Associations Between Ambient Air Pollution and Allergic Respiratory Diseases in Children and Adolescents: New Insights From the Seven Northeastern Cities Study in China

Kangkang Liu, Shanshan Li ... Guang-Hui Dongexpand

Abstract

Background: Little information exists on interaction effects between air pollution and influenza vaccination on allergic respiratory diseases. We conducted a large population-based study to evaluate the interaction effects between influenza vaccination and long-term exposure to ambient air pollution on allergic respiratory diseases in children and adolescents.

Methods: A cross-sectional study was investigated during 2012-2013 in 94 schools from Seven Northeastern Cities (SNEC) in China. Questionnaires surveys were obtained from 56 137 children and adolescents aged 2-17 years. Influenza vaccination was defined as receipt of the influenza vaccine. We estimated air pollutants exposure [nitrogen dioxide (NO2) and particulate matter with aerodynamic diameters ≤1 μm (PM1), ≤2.5 μm (PM2.5) and ≤10 μm (PM10)] using machine learning methods. We employed two-level generalized linear mix effects model to examine interactive effects between influenza vaccination and air pollution exposure on allergic respiratory diseases (asthma, asthma-related symptoms and allergic rhinitis), after controlling for important covariates.

Results: We found statistically significant interactions between influenza vaccination and air pollutants on allergic respiratory diseases and related symptoms (doctor-diagnosed asthma, current wheeze, wheeze, persistent phlegm and allergic rhinitis). The adjusted ORs for doctor-diagnosed asthma, current wheeze and allergic rhinitis among the unvaccinated group per interquartile range (IQR) increase in PM1 and PM2.5 were significantly higher than the corresponding ORs among the vaccinated group [For PM1, doctor-diagnosed asthma: OR: 1.89 (95%CI: 1.57-2.27) vs 1.65 (95%CI: 1.36-2.00); current wheeze: OR: 1.50 (95%CI: 1.22-1.85) vs 1.10 (95%CI: 0.89-1.37); allergic rhinitis: OR: 1.38 (95%CI: 1.15-1.66) vs 1.21 (95%CI: 1.00-1.46). For PM2.5, doctor-diagnosed asthma: OR: 1.81 (95%CI: 1.52-2.14) vs 1.57 (95%CI: 1.32-1.88); current wheeze: OR: 1.46 (95%CI: 1.21-1.76) vs 1.11 (95%CI: 0.91-1.35); allergic rhinitis: OR: 1.35 (95%CI: 1.14-1.60) vs 1.19 (95%CI: 1.00-1.42)]. The similar patterns were

observed for wheeze and persistent phlegm. The corresponding p values for interactions were less than 0.05, respectively. We assessed the risks of PM1-related and PM2.5-related current wheeze were decreased by 26.67% (95%CI: 1.04%-45.66%) and 23.97% (95%CI: 0.21%-42.08%) respectively, which was attributable to influenza vaccination (both p for efficiency <0.05).

Conclusions: Influenza vaccination may play an important role in mitigating the detrimental effects of long-term exposure to ambient air pollution on childhood allergic respiratory diseases. Policy targeted at increasing influenza vaccination may yield co-benefits in terms of reduced allergic respiratory diseases

Environ Pollut, 113434 2019 Oct 19

6. Association of Air Pollutants, Airborne Occupational Exposures, and Chronic Rhinosinusitis Disease Severity

Nathalia Velasquez, John A Moore ... Stella E Leecollapse

Abstract

Background: Previous work has shown that chronic rhinosinusitis (CRS) severity may be associated with particulate matter 2.5 (PM2.5) and black carbon (BC) in CRS patients without nasal polyps (CRSsNP). Data regarding occupational exposures, however, are lacking. We assessed the impact of PM2.5 , BC, as well as occupational airborne exposure on CRS disease severity.

Methods: Patients with CRS with nasal polyps (CRSwNP), CRSsNP, and aspirin-exacerbated respiratory disease (AERD) were identified from an institutionwide database. Spatial modeling from 37 pollutant monitoring sites in Allegheny County was used to estimate exposures. Patient occupations using the 2010 Standard Occupation Classification (SOC10) and airborne occupation exposures to vapors, gases, dusts, fumes, fibers and mists (VGDFFiM) or diesel fumes were recorded. Disease severity was measured by modified Lund-Mackay score (LMS), systemic corticosteroid therapy, and incidence of functional endoscopic sinus surgery (FESS).

Results: Two hundred thirty-four patients were included (CRSwNP, n = 113; CRSsNP, n = 96; AERD, n = 25). The prevalence of AERD among those with CRSwNP was 18%. Patients exposed to VGDFFiM or diesel fumes required higher steroid doses vs nonexposed patients (p = 0.015 and p = 0.03, respectively); patients with VGDFFiM levels >5% were more likely to undergo FESS vs nonexposed patients (p = 0.0378). There was no difference in PM2.5 and BC with regard to disease severity and FESS between CRSwNP, CRSsNP, and AERD patients.

Steroid use was significantly higher in CRSwNP and AERD vs CRSsNP (p = 0.001). LMS was significantly higher in AERD as compared with CRSwNP and CRSsNP (p = 0.001).

Conclusion: Occupational airborne exposure to VGDFFiM correlated with increased prevalence of FESS and need for corticosteroids in CRS patients. There was no difference in PM2.5 and BC levels and disease severity outcome measures between CRS subtypes in this subset.

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7. Sinonasal Mucormycosis: A to Z

V P Singh, Chetan Bansal, Madhuri Kainturacollapse

Abstract

Mucormycosis caused by one of the members of Mucoraceae family, is one of the most rapidly spreading and fatal fungal infection occurring mostly in Diabetic or Immunocompromised patients especially in developing countries. 26 patients suffering from sinonasal mucormycosis admitted in SGRRIM&HS, Dehradun from January 2013 to January 2017 are discussed. Diagnosis of mucormycosis was established on strong clinical suspicion with presence of grayish black crusting on nasal endoscopy which is confirmed by histopathology examination. Immediate correction of underlying immunocompromised status with debridement with intravenous liposomal amphotericin B was done in all the 26 cases out of which 10 patients were cured. Early detection and aggressive multidisciplinary management is must for the successful treatment of mucormycosis

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8. Recurrence Rate After Endoscopic vs. Open Approaches for Juvenile Nasopharyngeal Angiofibroma: A Meta-analysis

Camilo Reyes, Heather Bentley ... J Kenneth Byrd

Abstract

Context The effect on recurrence rate between patients with juvenile nasopharyngeal angiofibroma (JNA), treated by an endoscopic versus open approach, has not been well established. Objective A meta-analysis of the available literature concerning recurrence rate in patients who underwent surgery for JNA. **Methods** A retrospective meta-analysis of studies analyzing recurrence rate after endoscopic or open surgery for patients with JNA was performed using the DerSimonian-Laird random-effects method. English and non-English articles were reviewed using Embase, Medline, and Cochrane databases. **Results** Among nine studies, including 362 patients from 1981 to 2015, with a mean follow-up of 49.4 months, a total of 89

patients (24.5%) had recurrence. Our analysis revealed a total effect size of -0.16 in favor of endoscopic approach (-0.25 to -0.06, CI [confidence interval] 95%). When analyzing tumor by stage (Radkowski's IA-IIIB n = 299), the endoscopic approach proved to be superior independent of tumor stage (2 vs. 17% for tumors stage IA-IIA, and 26 vs. 32% for tumor stage IIB-IIIB for endoscopic and open approaches respectively; $p < 0.05$). The endoscopic approach has a statistical significant lower recurrence rate in patients without intracranial compromise when compared with the open approach (13 vs. 28%; $p < 0.02$). No statistical difference was seen in patients with intracranial compromise ($p = 0.5$) **Conclusion** The use of an endoscopic approach to treat JNA has a significantly lower recurrence rate when compared with open approaches. Independent of disease stage, an endoscopic approach should be the standard of care to surgically treat JNA. For cases with intracranial compromise, either approach can be used for surgical resection.

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9. High CT Attenuation Values Relative to the Brainstem May Predict Squamous Cell Carcinoma Arising From Inverted Papilloma

Sanami Azuma, Shu Kikuta ... Tatsuya Yamasoba

Abstract

Background: A diagnostic indicator for differentiating squamous cell carcinomas (SCCs) from inverted papillomas (IPs) has not been established. **Objectives:** This study aimed to evaluate whether CT attenuation values relative to those of the brainstem (relative CT number) could be useful in differentiating IPs from SCCs. **Material and Methods:** Consecutive patients who were pathologically diagnosed with IP or SCC between 2007 and 2017 were retrospectively identified. Relative CT numbers were compared between the two patient groups. The factors with predictive power for differentiating IPs from SCCs were identified by univariate and multivariate logistic regression analyses. **Results:** Fifty-four sinonasal tumour cases were finally analysed (IP, 25 cases; SCC, 29 cases). Relative CT numbers were significantly higher in SCC than in IP ($p < .001$). The univariate logistic regression analysis showed BMI, relative CT number, and disease duration to have predictive value for differentiating IPs from SCCs. In the multivariate logistic regression analysis, only the relative CT number had predictive value for distinguishing IP from SCC (odds ratio, 1.97), with a relative CT number of ≥1.4 being significantly associated with SCC. **Conclusions:** High relative CT numbers could potentially be used to identify SCCs, and their measurement could provide a basis for differentiating IPs from SCCs

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10. Treatments for Smell and Taste Disorders: A Critical Review

Richard L Doty

Abstract

A key concern of both the patient and physician is whether treatment is available that will eliminate or quell a given chemosensory disturbance. In cases where obvious oral, nasal, or intracranial pathology is involved, rational straightforward approaches to treatment are often available. In cases where damage to the sensory pathways is secondary to chronic inflammatory disease, trauma, viral invasion, toxic exposure, or unknown causes, the direction for therapy is more challenging. Indeed, many chemosensory disorders, if present for any period of time, cannot be reversed, while others spontaneously remit without any therapeutic intervention. This review assesses the strengths and weaknesses of more than two dozen approaches to treatment that have been suggested for a wide range of taste and smell disorders.

Handb Clin Neurol, 164, 455-479 2019