



## 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. Immediate versus delayed surgery in congenital choanal atresia: A systematic review.**

[Murray S1, Luo L2, Quimby A3, Barrowman N4, Vaccani JP5, Caulley L6.](#)

#### **Abstract**

#### **OBJECTIVES:**

To evaluate immediate versus delayed surgical intervention on treatment outcomes in the management of congenital choanal atresia.

#### **METHODS:**

This study adhered to Preferred Reporting Items for Systematic Review and Meta-Analysis guidelines in reporting a systematic review of the literature. OVID Medline, EMBASE and Pubmed databases were searched using relevant key terms. Inclusion and exclusion criteria were designed to capture studies examining immediate versus delayed primary surgery for congenital choanal atresia. Timing of surgery was classified as immediate or delayed based on median age of intervention stratified by type of obstruction. Primary outcomes were primary treatment failure, respiratory function and mortality rates.

#### **RESULTS:**



A total of 2765 abstracts were identified and screened by 2 independent reviewers. Of the 688 articles reviewed in full text, 23 articles met the study criteria and were subjected to quality assessment. The full study assessment and quality control measures yielded 23 studies (representing 362 patients) for pooled patient-level analysis in the systematic review. Primary treatment failures occurred in 24.8% of patients that underwent immediate surgery and 42.6% of patients that underwent delayed surgery for bilateral choanal atresia ( $p = 0.01$ ). There were no differences in mortality rates (5.6% vs 4.2%;  $p = 1.00$ ) or qualitative measures of respiratory function. There were no difference in treatment outcomes for patients with unilateral choanal atresia ( $p > 0.05$ ).

### **CONCLUSIONS:**

Through an analysis of pooled individual patient data, this systematic review of the literature demonstrated that there was significantly higher rates of treatment failure in patients that underwent delayed surgery for bilateral choanal atresia. Clinical trials and large prospective cohort studies investigating outcomes following immediate and delayed surgical intervention will provide further insight into treatment strategies

Int J Pediatr Otorhinolaryngol. 2019 Apr;119:47-53.

## **2. Risk factors for intraoperative saddle nose deformity in septoplasty patients.**

[Lee JJ1, Hong SD1, Dhong HJ1, Chung SK1, Kim HY2.](#)

### **Abstract**

### **INTRODUCTION:**

Septoplasty is one of the most common otolaryngologic procedures. Previous studies have reported that the overall rate of significant change in cosmetic appearance of the nose after septoplasty ranged from 0.4 to 3.4%, and saddle nose was the most commonly cited deformity. In this study, we evaluated the risk factors for intraoperative saddle nose in a group of septoplasty patients.

### **METHODS:**

This case-control study (1:2 case:control) was conducted based on retrospective chart review. Intraoperative saddle nose was observed in 108 (5.1%) of 2106 patients who underwent



septoplasty in our center between January 2008 and December 2017. The control group consisted of 216 randomly selected, hospital-matched septoplasty patients who had no intraoperative saddle nose deformity in the same period. The demographic data, preoperative endoscopic findings, and surgical procedures of the two groups were analyzed to identify possible risk factors of intraoperative saddle nose deformity.

#### **RESULTS:**

The mean ages of the two groups were 34.8 years (saddle group) and 33.2 years (control group). In multivariate logistic regression analysis, clinical risk factors associated with intraoperative saddle nose were female gender (OR 3.39; 95% CI 1.76-6.54;  $p < 0.01$ ), severe caudal septal deviation (OR 2.22; 95% CI 1.30-3.79;  $p = 0.003$ ), and intraoperative finding of septal cartilage fracture (OR 3.96; 95% CI 1.92-8.19;  $p < 0.01$ ).

#### **CONCLUSIONS:**

Severe caudal septal deviation, intraoperative fracture of septal cartilage, and female gender were risk factors for intraoperative saddle nose deformity in our study population.

Eur Arch Otorhinolaryngol. 2019 Jul;276(7):1981-1986.

### **3. Safety and efficacy of sphenopalatine artery ligation in recalcitrant pediatric epistaxis.**

[D'Oto AD1, Cox S2, Svider P3, Rangarajan S2, Sheyn A4.](#)

#### **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. 2019 Aug;123:128-131

## 4. Combined allergic rhinitis and asthma syndrome (CARAS).

[Paiva Ferreira LKD1, Paiva Ferreira LAM1, Monteiro TM1, Bezerra GC1, Bernardo LR2, Piuvezam MR3.](#)

### Abstract

Combined allergic rhinitis and asthma syndrome (CARAS) is a concept of "one airway - one disease" or "unified airway disease". The upper and lower airway inflammation characterizes allergic rhinitis and asthma, respectively and both diseases have shown an intimate connection in their genesis, coexistence and similarities as triggered by the same etiological agents; the same inflammatory cell profile and share therapeutic treatment. This review highlights the concept of CARAS by its phenotype, endotype and biomarker classification. Indeed, rhinitis is divided into four major phenotypes: allergic rhinitis; infectious rhinitis; non-infective/non-allergic rhinitis and mixed rhinitis. On the other hand, asthma has no common consensus yet; however, the most accepted classification is based on the stage of life (early- or late- onset asthma) in which the clinical symptoms are presented. Experimental researches where animals develop a syndrome similar to CARAS have been contributed to better understand the pathogenesis of the syndrome. Therefore, the aim of this review is to clarify current terms related to CARAS as definition, phenotypes, endotypes/biomarkers, physiopathology and treatments

Int Immunopharmacol. 2019 Jun 27;74:105718.



## **5. Unilateral versus bilateral sinonasal disease: Considerations in differential diagnosis and workup.**

[Eckhoff A1, Cox D2, Luk L2, Maidman S1, Wise SK2, DelGaudio JM2.](#)

### **Abstract**

#### **OBJECTIVE:**

Imaging findings play an important role in the workup and diagnosis of sinonasal disease. Unilateral versus bilateral involvement is a key finding that can differentiate between various diagnoses. Our objective is to characterize presenting symptoms, imaging findings, and most common diagnoses associated with unilateral versus bilateral sinonasal disease.

#### **METHODS:**

Patients who underwent surgical intervention for sinonasal disease at Emory University between May 2015 and December 2016 were included in the study. Information including demographic variables, comorbidities, presenting symptoms, imaging findings, and pathologic diagnosis was collected for each patient. Unilateral versus bilateral disease was determined by preoperative computer tomography and magnetic resonance imaging, and correlated to surgical and pathologic findings. Data was analyzed using quantitative methodologies and descriptive statistics.

#### **RESULTS:**

The study cohort consisted of 250 patients presenting for primary sinonasal surgery, including 110 patients with unilateral disease and 140 patients with bilateral disease. The most common diagnosis for patients with bilateral disease was chronic rhinosinusitis with nasal polyps (46%) followed by chronic rhinosinusitis without polyps (26%). For patients with unilateral disease the most common diagnoses were chronic rhinosinusitis without nasal polyps (21%), malignancy (19%), benign neoplasm (15%), and allergic fungal sinusitis (10%). There was a statistically significant association between unilateral sinonasal disease and the final diagnosis of benign neoplasm (OR = 7.8,  $P < .01$ ) and malignancy (OR = 8,  $P < .01$ ).

#### **CONCLUSION:**

Patients with unilateral sinus disease on initial imaging are less likely chronic rhinosinusitis compared to patients with bilateral disease. This should be taken into consideration in the workup and management of patients with unilateral sinus disease

Laryngoscope. 2019 Jun 20.



## **6. Definition and management of odontogenic maxillary sinusitis.**

[Kim SM1,2.](#)

### **Abstract**

#### **Background:**

Maxillary sinusitis of odontogenic origin, also known as maxillary sinusitis of dental origin or odontogenic maxillary sinusitis (OMS), is a common disease in dental, otorhinolaryngologic, allergic, general, and maxillofacial contexts. Despite being a well-known disease entity, many cases are referred to otorhinolaryngologists by both doctors and dentists. Thus, early detection and initial diagnosis often fail to detect its odontogenic origin.

#### **Main body:**

We searched recent databases including MEDLINE (PubMed), Embase, and the Cochrane Library using keyword combinations of "odontogenic," "odontogenic infection," "dental origin," "tooth origin," "sinusitis," "maxillary sinus," "maxillary sinusitis," "odontogenic maxillary sinusitis," "Caldwell Luc Procedure (CLP)," "rhinosinusitis," "functional endoscopic sinus surgery (FESS)," "modified endoscopy-assisted maxillary sinus surgery (MESS)," and "paranasal sinus." Aside from the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) trial, there have been very few randomized controlled trials examining OMS. We summarized the resulting data based on our diverse clinical experiences.

#### **Conclusion:**

To promote the most efficient and accurate management of OMS, this article summarizes the clinical features of rhinosinusitis compared with OMS and the pathogenesis, microbiology, diagnosis, and results of prompt consolidated management of OMS that prevent anticipated complications. The true origin of odontogenic infections is also reviewed.

Maxillofac Plast Reconstr Surg. 2019 Mar 29;41(1):13.



## **7. Morphologic, intraoperative, and histologic risk factors for sinonasal inverted papilloma recurrence.**

[Lee JJ1, Roland LT1,2, Licata JJ1, Orlowski HLP3, Jiramongkolchai P1, Piccirillo JF1, Kallogjeri D1, Klatt-Cromwell CN1, Chernock RD4, Schneider JS1.](#)

### **Abstract**

#### **OBJECTIVE:**

Sinonasal inverted papillomas (IP) are benign neoplasms with a propensity for local recurrence. Many risk factors are reported, with little consistency between studies. This study aimed to comprehensively assess for demographic, imaging, histopathologic, and intraoperative risk factors for recurrence.

#### **METHODS:**

We performed a single-center retrospective cohort study of patients with pathologically diagnosed IP without malignancy who underwent surgical resection between 1997 and 2018. Eligible patients were identified through a database maintained by the Department of Pathology. Logistic regression identified variables associated with recurrence, and conjunctive consolidation was performed to create a predictive model.

#### **RESULTS:**

Of 76 subjects, 37% (n = 28) had recurrence. Median follow-up and time to recurrence were 2.9 (range 0.5-21.1) and 1.7 (range 0.2-13.0) years, respectively. Confirmed negative margins on histology were protective (odds ratio [OR] 0.25, 95% confidence interval [CI] 0.08-0.85). Frontal sinus involvement (adjusted odds ratio [aOR] 5.83, 95% CI 1.20-28.37), incomplete resection (aOR 9.67, 95% CI 2.24-41.72), and presence of dysplasia (aOR 4.38, 95% CI 1.01-19.10) were significantly associated with recurrence on multivariable analysis. A three-level composite recurrence risk staging system was created by consolidating the above three variables. The recurrence risks of composite stage I, II, and III disease were 20%, 38%, and 100%, respectively. No demographic, imaging, staging, or surgical approach variables were associated with recurrence.

#### **CONCLUSION:**

Frontal sinus involvement, incomplete resection, and dysplasia were significant risk factors for IP recurrence, whereas confirmed negative margins were protective. Creation of a composite staging system using the above variables may allow for risk stratification and a patient-specific approach to postoperative IP management.

Laryngoscope. 2019 May 21.



## **8. Nasolacrimal Duct Management During Endoscopic Sinus and Skull Base Surgery.**

[Rotsides JM1, Franco A2, Albader A3, Casiano RR2, Lieberman SM1.](#)

### **Abstract**

#### **OBJECTIVE:**

To evaluate rates of epiphora after transection and marsupialization of the nasolacrimal duct (NLD) during endoscopic sinus and skull base surgery.

#### **INTRODUCTION:**

The nasolacrimal canal forms part of the medial wall of the maxillary sinus. Transecting the NLD is sometimes necessary for tumor resection or surgical access to maxillary sinus and infratemporal fossa pathology. There is no consensus for the endoscopic management of the NLD when only the duct is transected without involving the nasolacrimal sac.

#### **METHODS:**

Medical records of 29 patients from 2 academic institutions who underwent endoscopic sinus and skull base surgery with transection of the NLD were retrospectively reviewed. Whether the duct was marsupialized or simply transected was recorded, and the postoperative rate of epiphora was calculated.

#### **RESULTS:**

Mean age was 59 years (range, 14-86 years). Mean follow-up was 10.5 months (range, 1-33 months). The NLD was marsupialized in 16 (55%) and simply transected in 13 (45%) patients. Six patients underwent postoperative radiation. No patients in the marsupialization group had epiphora postoperatively, all with Munk score of 0. One patient in the transection group developed postoperative epiphora with Munk score of 1. Pathology included inverted papilloma (8), acute on chronic inflammation (6), B-cell lymphoma (3), juvenile nasopharyngeal angiofibroma (2), squamous cell carcinoma (2), Schneiderian papilloma (2), metastatic melanoma (1), HPV-related carcinoma (1), adenocarcinoma (1), benign epithelial cyst (1), adenoid cystic carcinoma (1), and erosive chronic sinusitis without nasal polyposis (1).

#### **CONCLUSION:**

Management after transection of the NLD varies widely. The duct may be simply transected or marsupialized, or a formal dacryocystorhinostomy can be performed. The surgeon must also choose whether to place a stent. Based on our small series and review of the literature,



marsupialization or simple transection of the NLD results in a low rate of postoperative epiphora in the setting of endoscopic sinus and skull base surgery

Ann Otol Rhinol Laryngol. 2019 May 14:3489419848454

## **9. Endoscopic transnasal image-guided approach to diagnosis in orbital apex and optic canal lesions.**

[Unadkat SN1, Rennie CE1, Grant WE1.](#)

### **Abstract**

#### **OBJECTIVE:**

Prompted by a recurring skull base multidisciplinary team debate on the necessity of securing a definitive tissue diagnosis before initiating treatment for lesions of the orbital apex, a review of anterior skull base procedures over an 11-year period was undertaken.

#### **METHODS:**

Data collected prospectively on cases from 2006 to 2017 were analysed. Presenting symptoms, imaging and histology findings, outcomes, complications, and impact on treatment were evaluated. All surgery was carried out endoscopically with the aid of image guidance.

#### **RESULTS:**

Twenty-one patients undergoing endoscopic orbital apex and/or optic canal biopsy were included. The mean patient age was 49 years. Five malignant tumours were identified, five benign tumours, seven infective cases (two tuberculosis and five fungal) and two cases of immunoglobulin G4 related disease. Two patients had non-diagnostic biopsies (one lesional) and were treated successfully as Tolosa-Hunt syndrome cases.

#### **CONCLUSION:**

A successful diagnosis was achieved in nearly all cases without adverse impact, other than one cerebrospinal fluid leakage case. Management was directly influenced by the outcome in all cases

J Laryngol Otol. 2019 Jun;133(6):501-507.



## **10. Olfactory Results of Endoscopic Endonasal Surgery for Pituitary Adenoma: A Prospective Study of 143 Patients.**

[Netuka D1, Masopust V2, Fundová P3, Astl J3, Školoudík D4, Májovský M2, Beneš V2.](#)

### **Abstract**

#### **BACKGROUND:**

Clinical examination, including pre- and postoperative assessment of olfaction function, should be included in evaluating surgical outcomes in patients with pituitary adenomas. Most of the studies are lacking assessment of olfactory function.

#### **METHODS:**

A prospective study of 143 patients who underwent surgical resection of pituitary adenomas from January 2014 to December 2017 was performed. Data on clinical presentation, pre- and postoperative neurologic, endocrinologic, and ophthalmologic examinations, complications, and follow-up outpatient examinations were recorded. Olfactory function was assessed using the Sniffin' Sticks odor identification test preoperatively, postoperatively (3 months), and 1 year after surgery.

#### **RESULTS:**

Normosmia was present preoperatively in 93.7% of patients, postoperatively in 95.8% of patients, and in 95.1% 1 year postsurgery. Hyposmia was present preoperatively in 4.2% of patients, postoperatively in 2.1% of patients, and in 1.4% 1 year after surgery. Anosmia was present preoperatively in 2.1% of patients, postoperatively in 2.1% of patients, and in 3.5% 1 year after surgery. In patients with preoperative normosmia, postoperative hyposmia and anosmia were present in 1.5% of patients. There were no differences according to age, sex, size, or type of pituitary adenoma.

#### **CONCLUSIONS:**

Assessment of olfactory function should be included in the analysis of pituitary adenoma surgery results. This prospective study showed low risk of olfaction deterioration if an endoscopic endonasal approach is used without any mucosal flaps for skull base reconstruction. Further studies that include objective olfaction assessment are warranted.

World Neurosurg. 2019 May 17. pii: S1878-8750(19)31335-X.