



## Reader Digest

**Digested by Dr. Tarek Kandil, MD. ENT Consultant, students  
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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. Neonatal nasal obstruction

[Andrés Alvo 1 2 3](#), [Galia Villarroel 4](#), [Cecilia Sedano 5](#)

#### Abstract

**Purpose:** Congenital nasal obstruction can be a significant cause of respiratory distress in the newborn, given that they are considered to be obligate nasal breathers. Several different causes have been described, which can be broadly classified as anatomical/malformative, non-tumoral masses and cysts, benign and malignant neoplasia, inflammatory/infectious, traumatic/iatrogenic, and miscellaneous. The purpose of this review is to provide updated and useful clinical information for teams involved in neonatal care, especially in a hospital setting.

**Methods:** A review of the available literature was performed. Studies were sourced from PubMed with searching of relevant headings and sub-headings and cross-referencing.

**Results:** The most common etiology is inflammatory, which can have different precipitating factors or be idiopathic, a condition known as neonatal rhinitis. On the other hand, some less frequent but nonetheless relevant conditions causing severe nasal obstruction include choanal atresia, midnasal stenosis, and pyriform aperture stenosis. Some cystic lesions, such as dacryocystoceles with intranasal mucocele, can also produce significant obstruction. Diagnosis usually requires a nasal endoscopy and in some cases imaging such as computed tomography. Management includes different medical and surgical strategies and will greatly depend on the etiology and the severity of symptoms.



**Conclusion:** Congenital nasal obstruction can be a significant cause of respiratory distress in the newborn. The wide spectrum of differential diagnoses requires a thorough knowledge of nasal anatomy, physiology, and pathology; as well as different management strategies.

Eur Arch Otorhinolaryngol. 2021 Oct;278(10):3605-3611.

## **2. Topical Administration of Carvacrol Improves Healing in Nasal Septal Perforation: An Experimental Animal Study**

[Senem Çengel Kurnaz 1, Nilüfer Kuruca 2, Dilek Güvenç 3, Muhammed Taha Kaya 2, Tolga Güvenç 2](#)

### **Abstract**

**Background:** Clinicians are exploring alternative treatments for nasal septum perforation since surgical treatment is challenging.

**Objective:** The effects of topical carvacrol on the healing of nasal septal perforation were investigated in an animal model.

**Method:** Twenty-one male New Zealand rabbits were randomly divided into three equal groups. A 5-mm circular biopsy punch was used to perforate the nasal septum behind the columella. For 14 days, bilateral gelatin sponges impregnated with carvacrol in olive oil in group 1, and only olive oil in group 2 were placed. Perforation only was performed in the control group. Animals were then sacrificed, and their nasal septums were removed. The closure of the perforation was measured, and samples were examined histopathologically. MMP-9 reactivity was evaluated using the immunoperoxidase technique. Histopathologic parameters were scored as 0 = none, 1 = mild, 2 = moderate, and 3 = strong.

**Results:** The septum perforation closure in the carvacrol group was statistically significant compared with the other groups ( $p < 0.001$ ). Cartilage regeneration, connective tissue density, and MMP-9 immunoreactivity were significantly higher in the carvacrol group ( $p = 0.020$ ,  $p = 0.009$ , and  $p = 0.008$ , respectively).

**Conclusion:** Topically administered carvacrol enhances wound healing in rabbit nasal septum perforation. It accelerated perforation closure by increasing cartilage regeneration, connective tissue, and MMP-9 expression

Am J Rhinol Allergy. 2022 Mar 3;19458924221085157.



### **3. Efficacy of topical tranexamic acid in epistaxis: A systematic review and meta-analysis**

[Rajesh Naidu Janapala 1, Quincy K Tran 2, Jigar Patel 1, Esha Mehta 1, Ali Pourmand 3](#)

#### **Abstract**

**Introduction:** Epistaxis is a very common presentation in the emergency department (ED), accounting for approximately 1 in 200 ED visits in the United States. Currently, standard practice includes the initial use of topical anesthetics and vasoconstrictors, followed by more invasive treatments such as nasal packing, cauterization or surgical ligation for refractory cases. Over the years several studies have investigated the potential use of topical Tranexamic Acid (TXA) in the management of epistaxis. We have conducted a meta-analysis to assess the efficacy of topical TXA versus other standard practices or placebo in the management of epistaxis.

**Methods:** PubMed and Scopus databases were searched from inception to April 2021. We included randomized controlled trials and observational studies investigating the efficacy of TXA in bleeding cessation in epistaxis in adults. The primary outcome measured was the prevalence of bleeding cessation after treatment at first assessment. Other outcomes were bleeding reoccurrence between 24 and 72 h and at 7-8 days. A random-effects model was used to estimate odds ratio (OR) for outcomes.

**Results:** A total of eight studies were included in the analysis, including seven randomized trials and one retrospective study. We included a total of 1299 patients, 596 (46%) received TXA while 703 (54%) received control treatment (placebo, lidocaine plus vasoconstrictors or local anesthetics). Patients who were treated with TXA were 3.5 times (OR 3.5, 95% CI 1.3-9.7) more likely to achieve bleeding cessation at the first assessment. Patients treated with TXA had 63% (OR 0.37, 95% CI 0.20-0.66) less likelihood of returning due to rebleeding at 24-72 h.

**Conclusion:** Topical TXA is associated with better bleeding cessation rates after treatment compared to the standard practices

Am J Emerg Med. 2022 Jan;51:169-175.



#### **4. The relationship between nasal polyps, bronchial asthma, allergic rhinitis, atopic dermatitis, and non-allergic rhinitis**

[Oksana Wojas 1, Magdalena Arcimowicz 2, Konrad Furmańczyk 1 3, Adam Sybilski 4, Filip Raciborski 1, Aneta Tomaszewska 1, Artur Walkiewicz 1, Piotr Samel-Kowalik 1, Bolesław Samoliński 1, Edyta Krzych-Fałta 1](#)

##### **Abstract**

**Introduction:** Nasal polyps are frequently associated with bronchial asthma and rhinitis. The chronic nature of the symptoms, the high post-treatment recurrence rates, as well as various comorbidities, constitute key factors that significantly affect the quality of life of patients diagnosed with this condition.

**Aim:** The purpose of the study was to estimate the prevalence of nasal polyps in the examined population and to assess the possible associative occurrence of nasal polyps (NP) with bronchial asthma (BA), allergic (AR) and non-allergic rhinitis (NAR), and atopic dermatitis (AD).

**Material and methods:** The ECRHS II and ISAAC questionnaires of the study group of 18,458 individuals, including 4,473 6-7-year-olds (24.2%), 4,675 13-14-year-olds (25.4%), and 9,310 20-44-year-olds (50.4%) were performed.

**Results:** The prevalence of nasal polyps in the examined group was 1.1%, reported by a total of 204 individuals. Nasal polyps were reported more frequently among urban residents (191 (1.1%)) than rural residents (13 (0.6%)). Our study demonstrated a correlation between the presence of nasal polyps and asthma, as well as allergic and non-allergic rhinitis. The greatest risk factor for NP in the evaluated subpopulation with multiple allergic conditions was the co-existence of non-allergic rhinitis and atopic dermatitis (OR = 6.09; 95% CI: 3.4-10.93).

**Conclusions:** Nasal polyps are relatively rare in the evaluated Polish population. Nonetheless, we believe their co-occurrence with non-allergic rhinitis, allergic rhinitis, bronchial asthma, and atopic dermatitis to be of significant importance, as it illustrates the phenomenon of multimorbidity of inflammatory conditions affecting the upper and lower respiratory tract.

Postepy Dermatol Alergol. 2021 Aug;38(4):650-656.



## 5. Treatment options for chronic rhinosinusitis with nasal polyps

[Dana V Wallace](#)

### Abstract

**Background:** The management of chronic rhinosinusitis with nasal polyps (CRSwNP) is evolving, with an emphasis on treating the underlying type 2 inflammation.

**Objective:** The objective was to summarize the updated evidence-based medical and surgical treatment recommendations for CRSwNP, including the position of biologics in the treatment algorithm.

**Methods:** This review compared and contrasted the therapeutic recommendations presented by the European Position Paper on Rhinosinusitis and Nasal Polyps 2020 and the International Consensus Statement on Allergy and Rhinology: Rhinosinusitis 2021.

**Results:** The long-term use of intranasal corticosteroids and the short-term use of oral corticosteroids are strongly recommended, whereas corticosteroid-eluting implants are considered an option. Although the use of saline solution rinses is recommended, there is uncertainty as to whether irrigation is more effective than sprays. Oral aspirin (ASA) desensitization, followed by ASA  $\geq$  300 mg daily for patients with ASA-exacerbated respiratory disease may be considered. In general, the use of antifungal agents offers no benefit and potential harm. Although the use of oral antibiotics for an acute exacerbation is still debated, oral and topical antibiotics are discouraged for subacute or chronic use. Antileukotrienes are inferior to intranasal corticosteroids and are unlikely to provide added benefit when used concomitantly. It is unlikely that the benefit of oral antihistamines and decongestants outweigh the potential harm. Dupilumab is recommended for severe CRSwNP when consensus-determined criteria are met. Omalizumab may be an option with concomitant poorly controlled asthma. Mepolizumab and reslizumab may be used, particularly in patients with concomitant uncontrolled asthma. In allergic fungal rhinosinusitis, oral and topical antifungals, antileukotrienes, allergen immunotherapy, and omalizumab are therapeutic options. Although surgical intervention is recognized to be of benefit for CRSwNP, there are no evidence-based criteria to indicate when maximum medical treatment has failed.

**Conclusion:** An evidence-based CRSwNP treatment algorithm for when to recommend surgery and/or initiate or discontinue biologics to maximize quality of life and cost-effectiveness is still lacking.

Allergy Asthma Proc. 2021 Nov 1;42(6):450-460.



## **6. Lateral rectus muscle palsy secondary to sphenoid sinusitis**

[W S Leong 1, O Mulla 1](#)

### **Abstract**

Isolated sphenoid sinus disease is a rare, often misdiagnosed condition of the paranasal sinus. If left untreated, it can lead to complications involving pituitary gland, cavernous sinus, neurological and vascular structures nearby. Early recognition and treatment are critical to prevent the progression of the disease. We present a case of a 60-year-old woman with a history of severe left-sided headache, facial pain, diplopia and left lateral rectus palsy. She was initially referred to ophthalmology and rheumatology for possible giant cell arteritis. Magnetic resonance imaging revealed opacification in left sphenoid sinus with cavernous sinus/superior orbital fissure involvement consistent with left sphenoid sinusitis. She was then referred to the ear, nose and throat department and had endoscopic transnasal sphenoidotomy in theatre. Culture results showed *Haemophilus influenzae* and fungal pseudohyphae. She recovered three months later after a course of antibiotics and antifungals. The onset of isolated sphenoid sinus disease is often insidious and the diagnosis of this condition remains a challenge. Magnetic resonance imaging and computed tomography remain the best diagnostic tools to recognise and manage this condition

Ann R Coll Surg Engl. 2022 Apr 21.

## **7. Twenty Years of Experience in Juvenile Nasopharyngeal Angiofibroma (JNA) Preoperative Endovascular Embolization: An Effective Procedure with a Low Complications Rate**

[Andrea Giorgianni 1, Stefano Molinaro 1, Edoardo Agosti 2, Alberto Vito Terrana 1, Francesco Alberto Vizzari 1, Alberto Daniele Arosio 3 4, Giacomo Pietrobon 5, Luca Volpi 6 7, Mario Turri-Zanoni 3 8, Giuseppe Craparo 9, Filippo Piacentino 10, Paolo Castelnuovo 3 4 8, Fabio Massimo Baruzzi 1, Maurizio Bignami 6 7](#)

### **Abstract**

Juvenile nasopharyngeal angiofibroma (JNA) is a benign tumor of the nasal cavity that predominantly affects young boys. Surgical removal remains the gold standard for the management of this disease. Preoperative intra-arterial embolization (PIAE) is useful for reductions in intraoperative blood loss and surgical complications. In our series of 79 patients who underwent preoperative embolization from 1999 to 2020, demographics, procedural aspects, surgical management and follow-up outcome were analyzed. Embolization was performed in a



similar fashion for all patients, with a superselective microcatheterization of external carotid artery (ECA) feeders and an injection of polyvinyl alcohol (PVA) particles, followed, in some cases, by the deployment of coils. Procedural success was reached in 100% of cases, with no complications such as bleeding or thromboembolic occlusion, and surgical intraoperative blood loss was significantly decreased. In conclusion, PIAE is a safe and effective technique in JNA treatment, minimizing intraoperative bleeding.

J Clin Med. 2021 Aug 31;10(17):3926.

## **8. Increased Neutrophil Infiltration and Epithelial Cell Proliferation in Sinonasal Inverted Papilloma Compared to Contralateral Nasal Polyps**

[Huan Wang 1 2](#), [Jiaying Zhou 1 2](#), [Le Shi 1](#), [Chen Zhang 1](#), [Wanpeng Li 1](#), [Li Hu 1 3 4](#), [Changwen Zhai 4 5](#), [Xicai Sun 1 4](#)

### **Abstract**

**Background:** Sinonasal inverted papilloma (IP) is a rare and benign epithelial tumor in the sinonasal tract. Recent study suggested the potential role of chronic inflammation in the pathogenesis of IP. This study aims to compare the inflammatory pattern, the capacity of epithelial cell proliferation and EGFR mutation status of unilateral IP with contralateral polyp tissue.

**Methods:** Sixteen patients with unilateral IP and contralateral nasal polyps (NP) were identified through a retrospective chart review. The neutrophil and eosinophil infiltration in IP and NP were assessed by immunostaining for neutrophil elastase and major basic protein (MBP). Immunohistochemistry was also used to assess the expression of FoxM1, Ki67 and cyclin D1 in IP tissue and contralateral NP. Sanger sequencing was used to evaluate the EGFR mutations.

**Results:** The neutrophil count in IP was significantly higher than contralateral NP and 68.8% patients presented with neutrophilic inflammation, whereas only 37.5% contralateral NP tissue showed neutrophilic inflammation. The percentage of positive FoxM1-staining cells was significantly increased in IP, and positively correlated with the percentage of cells with positive staining for cyclin D1 and ki67 as well as neutrophil counts. EGFR exon 20 insertions were detected in 14 (87.5%) IP samples and no EGFR mutations were found in contralateral NP sample.

**Conclusion:** Our study demonstrated distinct inflammatory pattern between IP and contralateral NP and implied the oncogenic role of neutrophils in the pathogenesis of IP. EGFR mutations may be the early event to initiate IP development by enhancing epithelial cell proliferation.



Am J Rhinol Allergy. 2022 Apr 11;19458924221091691.

## 9. Overview of Pituitary Surgery

[Christina H Fang 1](#), [Vijay Agarwal 2](#), [James K Liu 3](#), [Jean Anderson Eloy 4](#)

### Abstract

Management of patients with pituitary lesions is complex given the delicate nature of the surrounding anatomy and complexity of underlying disease. The care of these patients ideally involves a multidisciplinary team composed of endocrinologists, neuroradiologists, otolaryngologists, neurosurgeons, critical care physicians, and anesthesiologists. The endoscopic endonasal approach to the skull base has revolutionized pituitary and anterior skull base surgery and has gained popularity worldwide. This article presents an overview of the diagnosis, work-up, and management of patients with pituitary lesions, with an emphasis on surgical, perioperative, and postoperative considerations

Otolaryngol Clin North Am. 2022 Apr;55(2):205-221.

## 10. The coronavirus disease 2019: the prevalence, prognosis, and recovery from olfactory dysfunction (OD)

[Seyed Hadi Samimi Ardestani 1](#), [Mojtaba Mohammadi Ardehali 1](#), [Mahtab Rabbani Anari 1](#), [Benyamin Rahmaty 1](#), [Reza Erfanian 1](#), [Maryam Akbari 2](#), [Zohre Motedayen 3](#), [Fahimeh Samimi Niya 4](#), [Radmehr Aminloo 5](#), [Farbod Farahbakhsh 1](#), [Ali Hosseininasab 6](#), [Babak Hassanlouei 7](#), [Naime Rezaian 3](#), [Zahra Mokhtari 1](#)

### Abstract

**Background:** Many patients with coronavirus disease 2019 (COVID-19) complain from olfactory dysfunction (OD). Aims/objectives: To evaluate the prevalence, prognosis, and recovery from OD in COVID-19 patients.

**Material and methods:** In this study, patients with COVID-19 symptoms who were referred to six different tertiary referral centres were recruited after positive results for COVID-19. All patients were assessed for a one-month follow-up after the initial diagnosis of COVID-19.

**Results:** Three hundred and eleven patients with COVID-19 were recruited in the present study. Two hundred and seven patients (66.6%) had a recent history of OD. One hundred and seventy-eight patients had experienced OD as a primary symptom intercurrent to other COVID-19 symptoms or solely. Sixty-nine patients had OD at the time of presentation to referral centres. Headache and nasal obstruction had significant relationships with recovery from OD in this



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subgroup, and the platelet count was the most important predictor for the recovery from OD. One hundred seventy-nine (86.4%) patients were nearly or fully recovered from OD approximately a month after the onset of OD.

**Conclusion:** Headache, nasal obstruction, and platelet count may have specific roles as prognostic factors in the recovery from OD

Acta Otolaryngol. 2021 Feb;141(2):171-180