



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 surgery: outcomes in 42 patients over 20 years and a review of the literature

[H Attya 1 2 3, M Callaby 4, R Thevasagayam 5](#)

Abstract

Background: Choanal Atresia (CA) is potentially life-threatening and its repair has a variable revision rate.

Objectives: A case series study from 1997 to 2017 to evaluate the results of repair of CA and review factors affecting outcome.

Methods: Forty-two patients aged one day to 16 years were included. The outcome measures were the number of revision operations and the length of time over which surgery was required. A focused review of the recent literature (2000-2018) was done.

Results: Bilateral cases (17) had a mean of 5.24 operations compared to 2.2 operations in unilateral cases (25). Nine patients had bony CA and required 3.56 operations, twenty-four patients had mixed CA and required 3.58 operations. Twelve patients with comorbidities required more operations. Patients with reflux disease required a mean of 4.67 operations.

Conclusion: An increased rate of restenosis was found in patients with bilateral CA, GERD and those with comorbidities. Parents should be counselled regarding the likelihood of revision surgery. Use of stents or Mitomycin C did not impact the revision rate in this series.



Eur Arch Otorhinolaryngol. 2021 Jul;278(7):2347-2356

2. Comparison of the outcomes of nasal bone reduction using serial imaging

[Cho Long Lee 1, Ho Jik Yang 2, Young Joong Hwang 1](#)

Abstract

Background: Nasal bone fractures are frequently encountered in clinical practice. Although fracture reduction is simple and correction requires a short operative time, low patient satisfaction and relatively high complication rates remain issues for many surgeons. These challenges may result from inaccuracies in fracture recognition and assessment or inappropriate surgical planning. Findings from immediate postoperative computed tomography (CT) scans and those performed at 4 to 6 weeks postoperatively were compared to evaluate the accuracy and outcomes of nasal fracture reduction.

Methods: This retrospective study included patients diagnosed with nasal bone fractures at our department who underwent closed reduction surgery. Patients who did not undergo additional CT scans were excluded from the study. Clinical examinations, patient records, and radiographic images were evaluated in 20 patients with nasal bone fractures.

Results: CT findings from immediately after surgery and a 1 month follow-up were compared in 20 patients. Satisfactory nasal projection and aesthetically acceptable results were observed in patients with accurate correction or mild overcorrection, while undercorrection was associated with unfavorable results.

Conclusion: Closed reduction surgery for correcting nasal bone fractures usually provides acceptable outcomes with relatively few complications. If available, immediate postoperative CT scans are recommended to guide surgeons in the choice of whether to perform secondary adjustments if the initial results are unsatisfactory. Based on photogrammetric data, nasal bone reduction with accurate correction or mild overcorrection achieved acceptable and stable outcomes at 1 month postoperatively. Therefore, when upward dislocation is observed on postoperative CT, one can simply observe without a subsequent intervention

Arch Craniofac Surg. 2021 Aug;22(4):193-198.



3. Paranasal sinuses computed tomography findings in anosmia of COVID-19

[Ali Safavi Naeini 1, Mahboobeh Karimi-Galougahi 1, Nasim Raad 1, Jahangir Ghorbani 1, Ayeh Taraghi 2, Sara Haseli 3, Golfam Mehrparvar 4, Mehrdad Bakhshayeshkaram 3](#)

Abstract

Objective: Olfactory dysfunction in coronavirus disease-2019 (COVID-19) is poorly understood. Thus, mechanistic data are needed to elucidate the pathophysiological drivers of anosmia of COVID-19.

Methods: We performed the current study in patients who presented with anosmia and COVID-19 as documented by the polymerase chain reaction (PCR) assay between April 1st and May 15th, 2020. We assessed for the conductive causes of anosmia with computed tomography (CT) of paranasal sinuses.

Results: 49 patients who presented with anosmia and positive PCR assay for COVID-19 were included. The average age was 45 ± 12.2 years. Complete anosmia was present in 85.7% of patients and 91.8% of patients reported sudden onset of olfactory dysfunction. Taste disturbance was common (75.5%). There were no significant pathological changes in the paranasal sinuses on CT scans. Olfactory cleft and ethmoid sinuses appeared normal while in other sinuses, partial opacification was detected only in some cases.

Conclusion: We did not find significant mucosal changes or olfactory cleft abnormality on CT imaging in patients with anosmia of COVID-19. Conductive causes of anosmia (i.e., mucosal disease) do not seem play a significant role in anosmia of COVID-19.

Am J Otolaryngol. Nov-Dec 2020;41(6):102636.

4. Combination of a negative pressure suction device and endoscope can accurately locate the bleeding site of refractory epistaxis

[Xinghong Yin 1, Xinhai Zhang 1, Bo Wang 1, Keliang Li 1, Maoli Duan 2 3](#)

Abstract

Background: Selective endoscopic coagulation of a nasal bleeding vessel is an effective means of treating epistaxis. Precisely locating the bleeding site(s) is critical.

Objective: To investigate the utility of combining a negative pressure suction device and endoscope in locating bleeding sites of refractory epistaxis.



Methods: A total of 116 patients with refractory epistaxis, who underwent systematic endoscopic exploration under local anesthesia in the absence of identifiable sites of bleeding were randomly divided into two groups via negative pressure group (NPG) and control group (CG): The negative pressure suction device combined with an endoscope was used to re-explore the epistaxis. Nasal bleeding was induced using this method to help the operator locate the site of epistaxis accurately; the bleeding was then stopped using electrocoagulation with the suction electrode. The CG was treated with endoscopic re-exploration and selective tamponade.

Results: Compared with the CG, there were statistically significant differences in length of hospital stay, rebleeding, and postoperative pain and complications (all $p < .05$).

Conclusion and significance: Combining a negative pressure suction device and endoscope was a safe and effective technique for accurately locating bleeding sites in patients with refractory epistaxis

Acta Otolaryngol. 2021 Oct 11;1-5.

5. The Role of Environmental Risk Factors on the Development of Childhood Allergic Rhinitis

[Allison C Wu 1, Amber Dahlin 1, Alberta L Wang 1](#)

Abstract

Environmental factors play an important role in the development and exacerbation of allergic rhinitis (AR) in childhood. Indoor air pollution, such as house dust mites and secondhand smoke, can significantly increase the onset of AR, while pet dander may affect the exacerbation of AR symptoms in children. Furthermore, traffic related air pollution and pollen are outdoor air pollutants that can affect immune competency and airway responsiveness, increasing the risk of AR in children. Climate change has increased AR in children, as growth patterns of allergenic species have changed, resulting in longer pollen seasons. More extreme and frequent weather events also contribute to the deterioration of indoor air quality due to climate change. Additionally, viruses provoke respiratory tract infections, worsening the symptoms of AR, while viral infections alter the immune system. Although viruses and pollution influence development and exacerbation of AR, a variety of treatment and prevention options are available for AR patients. The protective influence of vegetation (greenness) is heavily associated with air pollution mitigation, relieving AR exacerbations, while the use of air filters can reduce allergic triggers. Oral antihistamines and intranasal corticosteroids are common pharmacotherapy for AR symptoms. In this review, we discuss the environmental risk factors for AR and summarize treatment strategies for preventing and managing AR in children

Children (Basel). 2021 Aug 17;8(8):708.



6. Mucormycosis in Indian COVID-19 Patients: Insight into Its Patho-Genesis, Clinical Manifestation, and Management Strategies

[Ram Kumar Sahu 1 2, Mounir M Salem-Bekhit 3 4, Bedanta Bhattacharjee 5, Yosif Almoshari 6, Abu Md Ashif Ikbal 7, Meshal Alshamrani 6, Alakesh Bharali 8, Ahmad Salawi 6, Retno Widyowati 1, Abdulrahman Alshammari 9, Ibrahim Elbagory 10](#)

Abstract

Mucormycosis in patients who have COVID-19 or who are otherwise immunocompromised has become a global problem, causing significant morbidity and mortality. Infection is debilitating and fatal, leading to loss of organs and emotional trauma. Radiographic manifestations are not specific, but diagnosis can be made through microscopic examination of materials collected from necrotic lesions. Treatment requires multidisciplinary expertise, as the fungus enters through the eyes and nose and may even reach the brain. Use of the many antifungal drugs available is limited by considerations of resistance and toxicity, but nanoparticles can overcome such limitations by reducing toxicity and increasing bioavailability. The lipid formulation of amphotericin-B (liposomal Am-B) is the first-line treatment for mucormycosis in COVID-19 patients, but its high cost and low availability have prompted a shift toward surgery, so that surgical debridement to remove all necrotic lesions remains the hallmark of effective treatment of mucormycosis in COVID-19. This review highlights the pathogenesis, clinical manifestation, and management of mucormycosis in patients who have COVID-19.

Antibiotics (Basel). 2021 Sep 6;10(9):1079.

7. Balloon Sinuplasty

[Daniel H. Lofgren 1, Carl Shermetaro 2](#)

Excerpt

Since the Federal Drug Administration (FDA) approval for nasal sinus use in 2005, balloon sinuplasty (BSP) has continued to grow in popularity among otolaryngologists as a minimally invasive way to treat patients suffering from chronic rhinosinusitis (CRS). The idea of using balloon dilation to open an anatomic structure is not a new concept, as cardiac surgeons have used similar techniques in coronary arteries since the late 1970s. In the late 1990s, some otolaryngologists were attempting to use 5-7 french Fogarty catheters to preserve the patency of nasal ostia. This technique offers the ability to dilate sinus ostia and outflow tracts via local microfracture - without destroying the overlying mucosa and maintaining physiologic function.



The goal of BSP is to allow for improved mucociliary clearance by minimizing obstruction of the outflow tracts, thus causing symptomatic improvement in patients suffering from CRS.

The description of chronic rhinosinusitis in the literature as the inflammation of nasal mucosa and the surrounding sinuses lasting more than 12 weeks. Patients describe a myriad of symptoms, including congestion, rhinorrhea, facial pressure, hyposmia, but most commonly, nasal obstruction. This condition's etiology is not fully understood, and multiple studies point to various causes, including biofilms, bacterial antigens, fungal infections, or immune dysfunction, among others. The disease is currently broken down into two distinct subgroups: CRS with nasal polyposis (CRSwNP) and CRS without nasal polyposis (CRSSNP). Approximations are that over 31 million people suffer from CRS, and although medical management is the mainstay treatment in these patients, the literature notes an increasing number of surgical cases. From 2006 to 2011, estimates were that 1 in 3.7 patients with CRS underwent a sinus surgery for treatment. Upwards of 300,000 patients elect for sinus surgery annually, which include BSP, functional endoscopic sinus surgery (FESS), or a mix of both called a “hybrid” procedure.

Recently, there has been a push to perform BSP under local sedation in an in-office setting, which avoids the use of general anesthesia in patients with concomitant comorbidities and provides cost savings to the patient and the physician. Holy et al. described that the ratio of sinus surgery per 100,000 patients had remained constant between 2006 and 2011. However, they did note a 7% increase in BSP only procedures during that time frame. One study, which used the Center for Medicare and Medicaid Database, looked at billing codes to compare the number of specific sinus procedures performed from 2012 to 2016. The number of balloon only procedures jumped from 5603 to 25640 in that timeframe. This study found that in-office BSP served as the major reason for this jump in treatment numbers. With the application of in-office BSP, concerns exist regarding the possibility of overutilization of the procedure due to its variety of proposed indications, which this activity will discuss later. In one retrospective cohort study, the authors used one of the largest commercial health insurance program's database. They noted that 86.53% of BSP procedures studied took place in an in-office setting. With the recent increase in popularity of BSP procedures and the ease of availability in an in-office setting, the authors of this paper hope to provide a general overview of balloon sinuplasty for physicians, healthcare providers, and patients alike.

In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan.

2021 Jul 31.



8. Role of Transarterial Angiography with Embolization in Deciding Surgical Approach to Juvenile Nasopharyngeal Angiofibroma: A Step-Ladder Approach

[Ravi S Manogaran 1, Arulalan Mathialagan 1, Vivek Singh 2, Prabhaker Mishra 3, Rajat Jain 4, Amit Keshri 1](#)

Abstract

Objective This study was aimed to understand the usefulness of transarterial angiography and embolization in management of juvenile nasopharyngeal angiofibroma (JNA) and to apply the information obtained to stage the disease, select appropriate surgical approach, predict intraoperative bleeding, and prognosticate the disease. **Study Design** This study represents a retrospective review of the patients of JNA with major focus on transarterial angiography and embolization findings and its clinical and surgical implications. **Setting** The study conducted at a tertiary-care super-specialty referral center. **Participants** Forty-two patients who had undergone transarterial angiography and embolization followed by surgery over the period of 5 years from July 2015 till February 2019 were participated in this study. **Main Outcome Measures** Tumor vascular pattern based on transarterial angiography, staging of the disease based on extent and vascular supply, surgical approach selected, and prognosticating the disease were determined from this study. **Conclusion** Transarterial angiography with embolization becomes a prudent preoperative investigation for management of JNA. It provides a complete three-dimensional map of the tumor with stage-specific vascular pattern, reduces vascularity of the tumor, and predicts the sites from where bleeding can occur intra operatively. Thus, it helps in choosing the appropriate surgical approach aiding in complete tumor removal with minimal bleeding

J Neurol Surg B Skull Base. 2021 Oct;82(5):547-555.

9. Dynamic Contrast-Enhanced MRI Can Quantitatively Discriminate the Original Site From Peripheral Portion of Sinonasal Inverted Papillomas

[Zheng Li 1, Mu Xian 2, Jian Guo 1, Xiaoxia Qu 1, Chengshuo Wang 2, Luo Zhang 2, Junfang Xian 1](#)

Abstract

Background: Identification of the original site of sinonasal inverted papillomas (SIPs) is difficult but essential for reducing the recurrence rate. Dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) may provide information about tissue perfusion and permeability to solve this problem.



Purpose: To investigate the accuracy of DCE-MRI parameters in discriminating between regions of interest (ROIs) in the original site and peripheral portion.

Study type: Retrospective.

Population: Ninety consecutive patients with pathologically proven SIP.

Field strength/sequence: 3.0T/DCE-MRI using fast-spoiled gradient recalled (FSPGR) T1 - weighted images with fat saturation.

Assessment: ROIs were placed in the original site and the peripheral portion of SIP by two radiologists according to surgical records. Maximum slope of increase (MaxSlope), contrast-enhancement ratio (CER), bolus arrival time (BAT), initial area under the signal intensity-time curve (IAUGC), volume transfer constant (Ktrans), volume of the extravascular extracellular space (v_e), and rate constant (K_{ep}) were calculated and repeated again with a month interval by a radiologist.

Statistical tests: Univariate and multivariate analysis was used to determine the best diagnostic parameters, and their performances in discrimination were evaluated by receiver operating characteristic (ROC) curves. Reproducibility was estimated by the intraclass correlation coefficient (ICC).

Results: MaxSlope, CER, IAUGC, Ktrans, and v_e were significantly lower ($P < 0.05$) in the original site than the peripheral portion of SIPs. CER (odds ratio [OR] = 0.227, 95% confidence interval [95% CI] = 0.073-0.704) and v_e (OR = 0.048, 95% CI = 0.004-0.527) were the best indicators for identifying the original ROIs. The combination of CER and v_e had the best diagnostic performance in the discrimination between the ROIs (the area under the curve [AUC]: 0.937; 95% CI: 0.896-0.974).

Data conclusion: DCE-MRI derived parameter values differed between the original site and the peripheral portion of SIPs. The model combining CER and v_e appears to be able to accurately distinguish the original from peripheral ROIs

J Magn Reson Imaging. 2021 May;53(5):1522-1527.

10. How close are we to anterior robotic skull base surgery?

[Raewyn G Campbell 1 2 3, Richard J Harvey 1 3](#)

Abstract

Purpose of review: The application of robotic surgery to anterior skull base disease has yet to be defined despite the potential for improved tumour resection with less morbidity in this region.



Pan Arab Rhinology Society PARS Reader's Digest



Complex anatomy and restricted access have limited the development of robotic anterior skull base surgery.

Recent findings: A limited number of transoral robotic surgical anterior skull base procedures have been undertaken; however, there are significant limitations to the utilization of this technology in the anterior skull base. In this article, the advantages, disadvantages and limitations of robotic anterior skull base surgery are discussed. Currently, the major limitation is the size of the robotic endoscope and of the available instrumentation. Technological advancements that provide promise for the future development of robotic anterior skull base surgery are in development, such as single-port robots, flexible instrument systems and miniaturization and growth of minimally invasive platforms.

Summary: Although transnasal access to the skull base is not possible with the currently available robotic systems, promising technology does exist and is in development. Robotic anterior skull base surgery promises to provide greater access to skull base disease, improve oncologic results, reduce morbidity and to reduce the ergonomic burden on the surgeon.

Curr Opin Otolaryngol Head Neck Surg. 2021 Feb 1;29(1):44-52.