Pan Arab Rhinology Society
PARS Reader's Digest

Reader Digest

Digested by Dr. Tarek Kandil, MD. ENT Consultant, students Hospital, Cairo University

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. Treatment of choanal atresia in a cohort of 29 patients: Determinants for success or failure

Carolina Garcia R van Schaik 1, Steffen Paasch 2, Tobias Albrecht 2, Sven Becker 2

Abstract

Background: Choanal Atresia is a congenital condition that presents as a blockage from the nasal cavity to the nasopharynx. According to the German statistical Institute (Statistisches Bundesamt), the incidence in Germany in 2018 reached 2.74 in 10,000 live births. It can present unilaterally or bilaterally. As newborns are obligate nasal breathers, management of bilateral atresia has to be performed early after birth. As for unilateral atresia, the optimal age for treatment was determined to be between 6 and 12 months in a recently published consensus.

Objective: The main purpose of this study is to characterize the patients treated for choanal atresia in the Department of Otorhinolaryngology and Head and Neck Surgery at a tertiary hospital in the south of Germany and, based in the demographic characteristics as well as intra- and post-operative treatment, to identify factors for success or failure of the surgery. A secondary goal was to describe the complications in the use of stents and analyse its influence in the results.

Material and methods: The cohort-based observational study included 29 patients, with a minimum follow up of one year, who underwent surgical endoscopic correction of both unilateral and bilateral choanal atresia from 2003 to 2020. Analysis of the demographics, intraoperative, and postoperative treatment, and their results, was performed. Multinomial logistic regression was applied for categorical values. Comparisons were performed using Fischer/chi-square test where applicable. A significance level of 0.05 was reached.

Results: The population was comprised of 34.5% male and 65.5% female patients. The age varied from 2 days to 20 years old, with a mean of 4.98 years and Standard Deviation (SD) 6.88. The

weight of the patients varied between 1.4 kg and 85.0 kg, with a mean of 19.36 and SD 22.58. Unilateral choanal atresia was present in 58.6%, and bilateral in 41.4%. Out of this population, 48.3% presented with associated malformations. The number of procedures per patient performed in general anesthesia varied from 1 to 9, with a mean of 2.52 and SD of 2.23: statistically higher for patients presenting with bilateral atresia with a p value of 0.001*. 20 patients had a tube (Vygon, France) placed at first surgery. In 5 patients, a drug-eluting stent (Propel mini (R); Intersect ENT, USA) was applied intraoperatively, without complications. In unilateral choanal atresia, surgical and functional success was attained in 88.2% of the cases. In bilateral cases, it reached 75%. We observed a strong linear relationship between the weight of the patient and the size of the choana perioperatively: R quadrat 0.596, which may be a determinant factor in the wound healing. Weight, age, and concomitant pathology achieved statistical significance in the logistic regression model (p respectively 0.001*, 0.001* and 0.010*), which shows its influence in the result of the surgery. In particular, weight inferior to 3 kg (p 0.001*, chi-square test) at the time of the first surgery is a determinant demographic factor for need of revision in order to achieve patency. There were no major complications associated with the use of a stent, besides its dislodgement. We could not infer an implication of its use on the success of the surgery in the present cohort.

Limitations: for this study were the small size of the cohort and non-standardized records for some variables.

Conclusions: Younger patients presenting with low weight and concomitant pathology have worse results after surgical endoscopic treatment of choanal atresia, revealing these characteristics to be determinant for success. The size of the neochoana is related to the weight of the patient, which is a limiting factor. In particular, patients under 3 kg had to undergo more procedures in order to achieve patency. The implication of the use of locally applied medication needs to be further studied

Int J Pediatr Otorhinolaryngol. 2022 Jul 14;160:111240.

2. Do closed reduction and fracture patterns of the nasal bone affect nasal septum deviation?

Jun Ho Choi 1, Hyun Myung Oh 1, Jae Ha Hwang 1, Kwang Seog Kim 1, Sam Yong Lee 1

Background: Many severe nasal bone fractures present with septal fractures, causing postoperative septal deviation and negatively affecting the patients' quality of life. However, when a septal fracture is absent, it is difficult to predict whether surgical correction can help minimize nasal septal deviation postoperatively. This study determined whether performing closed reduction on even mildly displaced nasal bone fracture could deter the outcome of septal deviation.

Methods: We retrospectively reviewed the data of 116 patients aged 21-72 years who presented at the outpatient clinic and emergency room with fractures of nasal bones only without any

involvement of the septum from January 2014 to December 2020. Patients were classified into three fracture type groups: A (unilateral), B (bilateral), and C (comminuted with depression). The degree of septal deviation was calculated by measuring the angle between the apex of the most prominent point and the crista galli in the coronal view on computed tomography images. The difference between the angles of the initial septal deviation and that of the follow-up was calculated and expressed as delta (Δ).

Results: Closed reduction tended to decrease the postoperative septal deviation in all fracture types, but the values were significantly meaningful only in type A and B fractures. In the surgical group, with type A as the baseline, type B showed a significantly larger Δ value, but type C was not significantly different, although type C showed a smaller Δ value. In the conservative group, with type A as the baseline, the other fracture types presented significantly lower Δ values.

Conclusion: For all fracture types, closed reduction significantly decreased the extent to which the nasal septum likely deviated. Therefore, when a patient is reluctant to undergo closed reduction, physicians should address the possible outcomes and prognosis of untreated nasal bone fractures.

Arch Craniofac Surg. 2022 Jun;23(3):119-124.

3. Otolaryngology consultations for COVID-19 patients: A retrospective cohort study of indications, interventions, and considerations

Kunal R Shetty 1, Brady J Anderson 2, Jumah G Ahmad 3, Lucy X Liu 4, Kevin Chow 3, Samuel G Erickson 5, Shohan Shetty 6, Amber U Luong 7

Abstract

Objective: To identify differences in inpatient otolaryngology consultations and interventions for patients based on COVID-19.

Methods: Records were reviewed for all patients for whom otolaryngology was consulted at a high-volume tertiary care hospital from April 30, 2020 to October 1, 2020. Demographic information, length of stay, COVID-19 status, indication for consultation, and otolaryngology interventions were recorded. Statistical analysis was performed using R software.

Results: Bleeding composed a significantly higher proportion of otolaryngology consults in COVID-19 positive patients (28% vs. 8.4%, $p<0.0001$). Management of bleeding was the most common procedure performed in positive patients (n=37, 35%), and they had a higher median number of interventions performed when compared to bleeding patients who tested negative (1, IQR 1-2 vs. 1, IQR 0-1, $p=0.04$). COVID-19 positive patients with bleeding were more likely to expire than those with other indications for otolaryngology consultation (50% vs. 7%, $p<0.001$).

Conclusion: Bleeding and associated interventions comprised the predominant discrepancy between COVID-19 positive and negative patients in our cohort. We encourage routine use of simple and cost-effective methods to decrease risk of bleeding

Auris Nasus Larynx. 2022 Aug 4;S0385-8146(22)00194-8.

4. Prevention of omalizumab for seasonal allergic rhinoconjunctivitis: a retrospective cohort study

Rui Tang 1, Shubin Lei 2, Liping Zhu 3, Yuzhen Lv 4, Hong Li 1

Abstract

Background: Allergic rhinoconjunctivitis (ARC) is an allergic disease that is characterized by conjunctival and nasal symptoms such as edema and congestion of conjunctiva, rhinorrhea, sneezing, and blocked nose. Seasonal ARC (SARC) is usually induced by seasonal allergens and often occurs at specific times during the year. Traditional treatments of SARC include nasal corticosteroids, antihistamines, and mast cell membrane stabilizers. Biological agents such as omalizumab have also been proved effective in the treatment of SARC.

Objectives: We aim to certify the preventative efficacy of omalizumab for SARC and explore its influence factors.

Methods: Medical records of 64 SARC patients were retrospectively analyzed, and generalized linear models were used to analyze influence factors of efficacy of omalizumab.

Results: Compared with forepassed pollen season without omalizumab treatment, the combined symptom and medication score (CSMS) of ARC with pre-seasonal omalizumab was significantly lower (with omalizumab: 0.67[0.00,1.83], without omalizumab: 4.00[2.83,4.96], $p<0.001$, max score=6). Subgroup analysis was conducted to explore the influence factor of preventative efficacy of omalizumab. The CSMS with omalizumab treatment were not significantly different among different age, gender, dosage, number of injections, and injection date subgroups ($p>0.05$).

Conclusion: Pre-seasonal omalizumab treatment could significantly relieve SARC related symptoms and reduce medication use. This preventative efficacy would not be influenced by the dosage and number of injections of omalizumab. A single dose of 150mg omalizumab could achieve a satisfactory outcome.

Front Immunol. 2022 Jul 28;13:913424.

5. Odontogenic sinusitis: A state-of-the-art review

John R Craig 1

Abstract

Odontogenic sinusitis (ODS) is more common than historically reported, and is underrepresented in the sinusitis literature. ODS is distinct from rhinosinusitis in that it is infectious sinusitis from an infectious dental source or a complication from dental procedures, and most commonly presents unilaterally. ODS clinical features, microbiology, and diagnostic and treatment paradigms are also distinct from rhinosinusitis. ODS evaluation and management should generally be conducted by both otolaryngologists and dental providers, and clinicians must be

able to suspect and confirm the condition. ODS suspicion is driven by certain clinical features like unilateral maxillary sinus opacification on computed tomography, overt maxillary dental pathology on computed tomography, unilateral middle meatal purulence on nasal endoscopy, foul smell, and odontogenic bacteria in sinus cultures. Otolaryngologists should confirm the sinusitis through nasal endoscopy by assessing for middle meatal purulence, edema, or polyps. Dental providers should confirm dental pathology through appropriate examinations and imaging. Once ODS is confirmed, a multidisciplinary shared decision-making process should ensue to discuss risks and benefits of the timing and different types of dental and sinus surgical interventions. Oral antibiotics are generally ineffective at resolving ODS, especially when there is treatable dental pathology. When both the dental pathology and sinusitis are addressed, resolution can be expected in 90%-100% of cases. For treatable dental pathology, while primary dental treatment may resolve the sinusitis, a significant percentage of patients still require endoscopic sinus surgery. For patients with significant sinusitis symptom burdens, primary endoscopic sinus surgery is an option to resolve symptoms faster, followed by appropriate dental management. More well-designed studies are necessary across all areas of ODS.

World J Otorhinolaryngol Head Neck Surg. 2022 Mar 22;8(1):8-15.

6. Unnecessary Use of Corticosteroids for managing early mild symptoms of COVID-19 may lead to Rhino-ortibal-cerebral mucormycosis in Patients with Diabetes - a case series from Lahore, Pakistan

Somia Iqtadar 1, Masooma Hashmat 1, Muhammad Nabeel Akbar Chaudhry 2, Sami Ullah Mumtaz 1, Sajid Abaidullah 1, Domingo A Pascual-Figal 3, Amjad Khan 4

Abstract

Rhino-orbital-cerebral mucormycosis (ROCM), a rare but fatal fungal infection, has recently emerged as a serious complication after corticosteroids therapy in COVID-19 patients, predominantly in diabetic and immunocompromised patients. The World Health Organization (WHO) COVID-19 current guidelines recommend corticosteroids administration in hospitalized COVID-19 patients requiring supplementary oxygen or mechanical ventilation. Herein, we report a case series of seven patients with COVID-19; three mild, three moderate, and one severe, from Lahore, Pakistan; all were using corticosteroids for managing their early mild symptoms of COVID-19 at home for around 2-3 weeks without a physician's advise, presented, and admitted with ROCM to Mayo hospital, Lahore, from March to June 2021. Out of the seven patients, five patients had uncontrolled diabetes mellitus (DM) as comorbidity. Eye pain, facial swelling and pain, nasal blockage, and black coloration around eyes, on palate, and oral mucosa were the presenting complaints at the time of admission. All the patients had radiographic imaging, including computed tomography (CT), paranasal sinuses (PNS), or brain magnetic

resonance imaging (MRI) carried out at the hospital, which confirmed mucosal thickening and adjacent sinus bony erosions with intracranial extension. All the patients were treated with local debridement of the infected necrotic tissue along with intravenous liposomal Amphotericin B and Posaconazole or Amphotericin B depending on the case. Due to timely management, in six out of seven patients, prognosis was good due to early diagnosis and treatment, while one patient with severe COVID-19 illness deteriorated and died. The misuse of corticosteroids for managing early mild symptoms of COVID-19 in diabetic and other immunocompromised patients can lead to fatal ROCM, which can further increase their risk of developing severe COVID-19 and mortality. It is stressed that only physician's recommended therapeutic advice should be followed for managing early mild symptoms of COVID-19 in self-isolation and avoid the unnecessary use of corticosteroids. This case series also emphasizes that COVID-19 diabetic patients treated with corticosteroids need more vigilant monitoring and high suspicion of early diagnosis and treatment of invasive fungal infection. Early diagnosis and management can reduce morbidity and mortality

Ther Adv Infect Dis. 2022 May 6;9:20499361221097417.

7. Sinonasal Inverted Papilloma Showing a Misleading Finding on Magnetic Resonance Imaging

Yuki Numano 1, Kazuhiro Nomura 1, Mitsuru Sugawara 1, Tomotaka Hemmi 2, Jun Suzuki 2, Risako Kakuta 2, Yukio Katori 2

Abstract

Sinonasal inverted papilloma (IP) is the most common benign tumor in sinonasal cavities. Treatment involves excising the whole tumor, so it is essential to evaluate the extent of the tumor by preoperative radiographic findings. Magnetic resonance imaging (MRI) is superior to computed tomography (CT) for determining a tumor's location as MRI can discern the difference between mucus and IP. We herein report a 51-year-old man with sinonasal IP treated with endoscopic sinus surgery (ESS). Preoperative MRI showed findings resembling a convoluted cerebriform pattern on T2-weighted imaging, but this site was not enhanced by intravenous gadolinium at all. We preoperatively suspected that this site was not part of the tumor but rather the accumulation of mucus, and indeed, we found no tumor at this site when we performed the surgery. This patient is a valuable example of misleading findings of IP on T2-weighted imaging and underscores the importance of contrast-enhanced T1-weighted imaging to determine the extent of IP.

Ear Nose Throat J. 2022 Apr 29;1455613221095614.

8. Benign bony tumors of the paranasal sinuses, orbit, and skull base

Spencer Waldman 1, Menachem Shimonov 2, Nathan Yang 3, Daniel Spielman 4, Kyle J Godfrey 5, Kathryn E Dean 6, C Douglas Phillips 7, Samuel Nathaniel Helman 8

Abstract

Benign bony tumors of the skull base and paranasal sinuses are uncommon entities, with an overall higher incidence in males. Benign bony tumors may lead to local expansion with resultant mass effect of potentially critical structures. Some benign bony tumors may undergo malignant transformation. This article reviews the presentation and management of benign bone tumors of the skull base and paranasal sinuses with special consideration to involvement of the adjacent orbit, intracranial and critical neurovascular structures. This review covers tumor incidence, location, gross and histologic appearance as well as radiographic findings, treatment, and recurrence rates. Tumors discussed in this article include osteochondromas, osteomas, osteoid osteomas, aneurysmal bone cysts, fibrous dysplasia, giant cell tumors, cemento-ossifying fibroma, ameloblastic fibro-odontoma, ecchordosis physaliphora, chondromyxoid fibroma, primary chronic osteomyelitis, primary chronic osteomyelitis, osteochondromyxoma, and dense bone islands.

Am J Otolaryngol. 2022 May-Jun;43(3):103404.

9. Anatomy for Endoscopic Endonasal Skull Base Surgery

Tetsuji Sanuki 1, Shogo Sumiya

Abstract

Endoscopic endonasal skull base surgery has become popular due to its minimally invasive nature to the patient and the development of various medical devices. The reason why it is considered less invasive is that it is possible to reach the anterior skull base lesion using the corridor of the nasal cavity and paranasal sinuses. The roles of the nasal sinuses include acting as breathing pathways, warming, humidifying, and filtering of inhaled air, olfaction, and being a resonant cavity, all of which are important for a comfortable life, and the loss of these functions reduces the quality of life. Therefore, to perform endoscopic endonasal skull base surgery in a minimally invasive and safe manner, it is necessary to understand the anatomy of the nasal sinuses to reach anterior skull base lesions while preserving nasal structures as much as possible. This article describes the normal local anatomy of the nasal cavity and the paranasal sinuses, as well as the surgical techniques, especially the anterior skull base approach and the pterygopalatine fossa approach, for endoscopic endonasal skull base surgery.

No Shinkei Geka. 2022 May;50(3):535-543.

10. The Selective Role of Open and Endoscopic Approaches for Sinonasal Malignant Tumours

Fernando López 1 2, Jatin P Shah 3 4, Jonathan J Beitler 5, Carl H Snyderman 6, Valerie Lund 7, Cesare Piazza 8, Antti A Mäkitie 9, Orlando Guntinas-Lichius 10, Juan P Rodrigo 11 12, Luiz P Kowalski 13 14, Miquel Quer 15, Ashok Shaha 3, Akihiro Homma 16, Alvaro Sanabria 17 18, Renata Ferrarotto 19, Anne W M Lee 20 21, Victor H F Lee 20 21, Alessandra Rinaldo 22, Alfio Ferlito 23

Abstract

Endoscopic endonasal surgery has been demonstrated to be effective in the treatment of selected cases of sinonasal cancers. However, in cases of locally advanced neoplasms, as well as recurrences, the most appropriate approach is still debated. The present review aims to summarize the current state of knowledge on the utility of open approaches to resect sinonasal malignant tumours. Published comparative studies and meta-analyses suggest comparable oncological results with lower morbidity for the endoscopic approaches, but selection biases cannot be excluded. After a critical analysis of the available literature, it can be concluded that endoscopic surgery for selected lesions allows for oncologically safe resections with decreased morbidity. However, when endoscopic endonasal surgery is contraindicated and definitive chemoradiotherapy is not appropriate, craniofacial and transfacial approaches remain the best therapeutic option.

Adv Ther. 2022 Jun;39(6):2379-2397.