



Reader Digest

**Digested by Dr. Tarek Kandil, MD. Consultant, students Hospital,
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1. Diseases of the nose and paranasal sinuses in child.

Stenner M, Rudack C.

Abstract

Diseases of the pediatric nose and nasal sinuses as well as neighboring anatomical structures encompass a variety of pathologies, especially of inflammatory nature. Congenital disease, such as malformations and structural deviations of the nasal septum, as well as systemic metabolic pathologies affecting the nose and sinuses, rarely require medical therapy from an Otolaryngologist. The immunological function of the mucosa and genetic factors play a role in the development of disease in the pediatric upper airway tract, especially due to the constantly changing anatomy in this growth phase. Disease description of the nose and nasal sinuses due to mid-facial growth must also take developmental age differences (infant, toddler, preschool, and school age) into account. Epidemiological examinations and evidence based studies are often lacking in the pediatric population. The wide range of inflammatory diseases of the nose and paranasal sinuses, such as the acute and chronic rhinosinusitis, the allergic rhinitis, and adenoid disease, play a role in the susceptibility of a child to infection. The susceptibility to infection depends on the pediatric age structure (infant, young child) and has yet to be well defined. The acute rhinosinusitis in children develops after a viral infection of the upper airways, also referred to as the "common cold" in the literature. It usually spontaneously heals within ten days without any medical therapy. Antibiotic therapy is prudent in complicated episodes of ARS. The antibiotic therapy is reserved for children with complications or associated disease, such as bronchial asthma and/or chronic bronchitis. A chronic rhinosinusitis is defined as the inflammatory change in the nasal mucosa and nasal sinus mucosa, in which the corresponding symptoms persist for over 12 weeks. The indication for CT-imaging of the nasal sinuses is reserved for cases of chronic rhinosinusitis that have been successfully treated with medication. A staged therapeutic concept is followed in CRS based on conservative and surgical methods. Nasal sinus surgery is considered nowadays as effective and safe in children. Based on the assumption that adenoids are a reservoir for bacteria, from which recurrent infections of the nose and nasal sinus originate, the adenoidectomy is still defined as a cleansing procedure in rhinosinusitis. 69.3% of the children had benefit from adenoidectomy. Comorbidities, such as pediatric bronchial asthma, presently play an even more important role in the therapy of rhinosinusitis; therefore, it is often wise to have the support of pediatricians. In western European countries 40% of children presently suffer from allergic rhinitis, in which pronounced nasal obstruction can cause disturbed growth in facial bones. An early therapy with SIT may prevent the development of bronchial asthma and secondary sensitization to other allergens. Therefore, SIT is recommended in treatment of allergic rhinitis whenever, if possible. The assessment of diagnostic tools is for the examiner not often possible due to the lack of evidence. Rhinosurgical approaches are often described in study reports; however, they lack the standard prospective randomized long-term study design required nowadays and can only be evaluated with caution in the literature.

GMS Curr Top Otorhinolaryngol Head Neck Surg. 2014 Dec 1;13:Doc10



2. Indications and limitations of the endoscopic endonasal approach for anterior cranial base meningiomas.

Schroeder HW.

Abstract

OBJECTIVE:

To describe the decision-making and the surgical strategy in the resection of anterior skull base meningiomas.

METHODS:

Details of the microsurgical and endoscopic approach to anterior skull base meningiomas are presented.

RESULTS:

Small and midsize olfactory groove, planum sphenoidale, and tuberculum sellae meningiomas can be removed via an endonasal endoscopic approach, an alternative option to the transcranial microsurgical approach. The choice of approach depends on tumor size and location, involvement of important neurovascular structures, and, most importantly, the surgeon's preference and experience. In my opinion, in most meningiomas, the endonasal approach has no advantage compared with the transcranial approach. Disadvantages of the endonasal approach are the discomfort after surgery and the prolonged recovery phase because of the nasal morbidity, which requires intensive nasal care. Compared with the eyebrow approach, the trauma to the nasal cavity, paranasal sinuses, and skull base is greater, and the risk of cerebrospinal fluid leak is higher.

CONCLUSION:

For most skull base meningiomas, I usually prefer the endoscope-assisted microsurgical transcranial approach which combines the advantages of the operating microscope with the advantages of the endoscope. The endonasal approach is beneficial for small tumors located below or behind the chiasm

World Neurosurg. 2014 Dec;82 (6 Suppl): S81-5

3. The nasal and sinus microbiome in health and disease.

Wilson MT, Hamilos DL.

Abstract

There has been great interest in unraveling the complex inter-relationships between microbes and humans as they relate to human health and disease. This review will focus on recent advances in the appreciation and understanding of these relationships in terms of the upper respiratory tract, specifically the nose and paranasal sinuses.



4. Comprehensive management of the paranasal sinuses in patients undergoing endoscopic endonasal skull base surgery.

Nyquist GG1, Rosen MR2, Friedel ME2, Beahm DD2, Farrell CJ3, Evans JJ3.

Abstract

OBJECTIVE:

The endonasal route often provides the most direct and safe approach to skull base pathology. In this article we review the literature with regard to management of the paranasal sinuses in the setting of skull base surgery.

METHODS:

We describe our institutional experience and review the literature of concurrent management of the sinusitis in patients undergoing endoscopic skull base surgery.

RESULTS:

Patients should be optimized preoperatively to ensure the endonasal route is a safe corridor to enter the intracranial cavity. Often the paranasal sinuses can be surgically addressed at the same time as endoscopic skull base surgery. We describe the technical details of management of the paranasal sinuses when addressing skull base pathology.

CONCLUSIONS:

Careful management of the paranasal sinuses throughout the peri-operative course is paramount to optimizing sinonasal function and safety.

World Neurosurg. 2014 Dec;82(6 Suppl):S54-8.

5. A novel technique for mitomycin-c application in frontal sinus surgery.

Konstantinidis I, Chatziavramidis A, Constantinidis J.

Abstract

OBJECTIVE:

Local application of mitomycin-c (MMC) seems to be effective in reducing adhesions and stenosis after FESS. However this is not clearly seen in frontal sinusotomy. This study assesses the effectiveness of local MMC in the frontal ostium using a foamy material (otowick) and compared with cottonoids.

METHODS:

Forty-seven patients with chronic rhinosinusitis without polyps enrolled in this study. Two subgroups were studied: one with MMC application in one nostril using cottonoids and a second with MMC injected in an otowick. In all patients MMC was applied twice, intraoperatively and 4 weeks later.



In both groups normal saline was applied to the other nostril on the same material with the MMC side. Six months postoperatively all patients were assessed endoscopically by a clinician blinded to the MMC side.

RESULTS:

Overall, MMC application was more effective than normal saline in both groups. Otowick use presented favorable initial results especially in primary cases regarding ostium patency, and need for revision surgery. The use of MMC cottonoids did not show any benefit in primary cases.

CONCLUSION:

The described technique seems to be effective in maintaining frontal ostium patency as it provides a more precise and deeper drug delivery to this area.

Rhinology. 2014 Sep;52(3): 276-80

6. Bevacizumab: A new success in hereditary hemorrhagic telangiectasia.

BennesserAlaoui H1, Lehraiki M2, Hamaz S2, El Attar N2, Fakhreddine N2, Serraj K2.

Abstract

INTRODUCTION:

Hereditary hemorrhagic telangiectasia (HHT), is a rare, hereditary vascular dysplasia, characterized by recurrent epistaxis, mucocutaneous telangiectasias and visceral arteriovenous malformations. The vascular endothelial growth factor VEGF seems to play a crucial role in the pathogenesis of this disease. Recently bevacizumab, a humanized monoclonal VEGF inhibitor, has shown promise in treating patients with HHT.

CASE REPORT:

A 66-year-old man, having HHT since the age of 30 years with recurrent epistaxis related to telangiectasia at the nasal septum and chronic iron deficiency anemia requiring frequent blood transfusions with iron infusions. The assessment of his disease showed septal perforation, telangiectasis in the proximal jejunum and terminal ileum, and pulmonary arteriovenous malformations. There was no improvement, despite iron infusions, repeated blood transfusions and cauterization. The patient was treated with bevacizumab at a dose of 5mg/kg/infusion every 2 weeks and was given 6 cycles. Bevacizumab, was effective without side effects.

DISCUSSION:

It has been hypothesized that HHT is related to an imbalanced state between antiangiogenic factors and proangiogenic factors. Mutations of 3 genes are actually identified in HHT: ENG, ACVRL1, MADH4. The management of patients with HHT currently based on screening for visceral arteriovenous malformations and symptomatic measures are often disappointing. However, the angiogenic nature of this disease suggests an interesting therapy by using angiogenesis inhibitor. Therefore, bevacizumab was



introduced as a potential therapy for HHT. Some clinical cases or small series report the efficacy of bevacizumab, in HHT with recurrent epistaxis, refractory iron deficiency anemia, gastrointestinal bleeding and also in liver vascular malformations with high cardiac output failure.

CONCLUSION:

The use of modulators of angiogenesis such as bevacizumab is a possible therapeutic target in HHT
Rev Med Interne. 2015 Jan 13

7. Long-term efficacy of Nd:YAG laser photocoagulation vs. liquid paraffin plus antiseptic cream in the treatment of recurrent epistaxis.

Zhang J1, Qiu R, Wei C.

Abstract

The objective of this study was to evaluate the long-term efficacy of Nd:YAG laser photocoagulation with that of liquid paraffin plus antiseptic cream in the management of recurrent epistaxis. Eighty consecutive patients who suffered from recurrent anterior epistaxis presented to the Otolaryngology Department at the Eye and ENT Hospital, Fudan University between February 2011 and June 2011. These patients with histories of recurrent epistaxis were randomly assigned to receive treatment in an outpatient setting consisting of either a combination of liquid paraffin plus antiseptic cream (Group 1) or Nd:YAG laser photocoagulation (Group 2). Main outcome measures: the following outcome measures were assessed: bleeding intensity; bleeding frequency 2 years after treatment (0 = no bleeding, 1 = reduced bleeding, 2 = the same, 3 = worse), participant's perception of discomfort during the management (grade 0-10, where 10 is the worst pain), and complications. Finally, 70 patients remain in our study. At 2 years, 86 % of laser patients versus 31 % of control patients had no reported bleeding. The outcome score at 2 years after treatment showed a significant difference between the two groups ($P = 0.000$, $P < 0.01$). The median and mean \pm SD pain levels experienced were 5.0 and 5.2 ± 2.2 . Both groups had no complications. It can be further concluded that Nd:YAG laser photocoagulation is a preferable therapy in the treatment of recurrent epistaxis in long-term efficacy. The level of pain associated with the procedure was well tolerated. It is a simple, easy, safe and rapid therapy, which can be performed in an office setting.

Eur Arch Otorhinolaryngol. 2015 Jan 17

8. Tumors of the pediatric maxillofacial skeleton: a 20-year clinical study.

Perry KS1, Tkaczuk AT1, Caccamese JF Jr2, Ord RA2, Pereira KD1.

Abstract

IMPORTANCE:

Pediatric jaw tumors are a rare clinical entity and are not well addressed in the otolaryngology literature. It is important that otolaryngologists be familiar with the clinical features, management, and outcomes associated with these lesions.

OBJECTIVE:

To review the clinical presentation, management, and outcomes of jaw tumors in children treated at a tertiary care academic center.



DESIGN, SETTING, AND PARTICIPANTS:

Retrospective medical record review of children 16 years or younger who presented to the departments of Oral-Maxillofacial Surgery and Otorhinolaryngology at the University of Maryland Medical Center between 1992 and 2012 and were diagnosed as having a jaw tumor. A PubMed review of literature from 1992 to 2013 on jaw tumors in children was also conducted.

MAIN OUTCOMES AND MEASURES:

Medical records were reviewed for data on symptoms, physical findings, pathologic diagnosis, intervention, and outcomes.

RESULTS:

The medical records of 76 patients evaluated for a jaw mass were reviewed, and 20 were found to have a diagnosis of a jaw tumor. The 2 most common pathologic diagnoses were ameloblastoma (n = 5) and juvenile ossifying fibroma (n = 4). Two tumors were malignant, a rhabdomyosarcoma and a teratoma. Thirteen patients presented with evidence of a mass or swelling, 5 patients were asymptomatic with a lesion found on surveillance panoramic radiography, and 1 patient presented with epistaxis and 1 with facial weakness and pain. All tumors excluding a lymphangioma and a rhabdomyosarcoma were managed surgically. Eight patients underwent more than 1 procedure including secondary reconstruction prior to a satisfactory outcome.

CONCLUSIONS AND RELEVANCE:

Pediatric jaw tumors are rare lesions most commonly presenting with a swelling or mass. Patients can be asymptomatic with the lesion identified on routine imaging. Certain clinical features such as age, location of tumor, and presence or absence of bone and soft tissue can narrow the differential diagnosis and identify tumors that may be malignant. Incisional biopsy is an important first step. A majority of jaw tumors are benign but require surgical intervention for eradication of disease. Multiple procedures, including reconstruction, may be required for certain lesions prior to cure.

JAMA Otolaryngol Head Neck Surg. 2015 Jan 1; 141(1): 40-4.

9. The role of microbes in the pathogenesis of acute rhinosinusitis in young adults.

Autio TJ1, Tapiainen T, Koskenkorva T, Närkiö M, Lappalainen M, Nikkari S, Hemmilä H, Koskela KA, Koskela M, Koivunen P, Alho OP.

Abstract

OBJECTIVES/HYPOTHESIS:

To provide information on the course of acute rhinosinusitis (ARS) with sequential nasal and paranasal microbiological data and their correlation with clinical outcomes.



STUDY DESIGN:

We conducted a prospective cohort study among 50 Finnish military recruits with clinically diagnosed ARS in spring 2012.

METHODS:

We collected symptom, nasal endoscopy, and cone-beam CT (CBCT) scores during the early (2-3 days from onset) and later phases (9-10 days). We took viral samples from the nasopharynx (multiplex respiratory virus polymerase chain reaction [PCR]), bacterial culture from the middle meatus during both phases, and both viral and bacterial samples from the maxillary sinus aspirate (respiratory virus PCR, bacterial culture, broad-range bacterial PCR) during the later phase. Cilia destruction and microbial biofilms were sought from a nasal mucosal biopsy sample.

RESULTS:

We found that 42 (84%) of the subjects had viral nucleic acid in the nasopharynx during ARS. During the early phase, 28 (56%) of the subjects had nontypeable *H. influenzae* (NTHi) in the middle meatus, which was associated with wider paranasal mucosal changes in CBCT scans and increased symptoms during the study period. After 9 to 10 days from the onset, NTHi was found in the maxillary sinus in eight subjects (40%, 8/20) and led to prolonged symptoms. Bacterial biofilm was ruled out in 39 (78%) cases, and cilia destruction did not correlate with microbiological or clinical outcomes.

CONCLUSION:

Nasal and paranasal *H. influenzae* coinfection during viral infection may modify the symptoms and the extent of sinonasal mucosal disease observed in CBCT scans already from the beginning of the ARS episode

Laryngoscope. 2015 Jan; 125(1):E1-7

10. Mucormycosis (Mucor fungus ball) of the maxillary sinus.

Cho HS1, Yang HS, Kim KS.

Abstract

A fungus ball is an extramucosal fungal proliferation that completely fills one or more paranasal sinuses and usually occurs as a unilateral infection. It is mainly caused by *Aspergillus* spp in an immunocompetent host, but some cases of paranasal fungal balls reportedly have been caused by *Mucor* spp. A *Mucor* fungus ball is usually found in the maxillary sinus and/or the sphenoid sinus and may be black in color. Patients with mucormycosis, or a *Mucor* fungal ball infection, usually present with facial pain or headache. On computed tomography, there are no pathognomonic findings that are conclusive for a diagnosis of mucormycosis. In this article we report a case of mucormycosis in a 56-year-old woman and provide a comprehensive review of the literature on the "Mucor fungus ball." To the best of our knowledge, 5 case reports (8 patients) have been published in which the fungus ball was thought to be caused by *Mucor* spp.

Ear Nose Throat J. 2014 Oct-Nov; 93(10-11):E18-22.