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. Stenting versus stentless repair for bilateral choanal atresia: A systematic review of the literature

Leo Gundle 1, Shilpa Ojha 2, Joseph Hendry 2, Harry Rosen 3

Abstract

Background: Bilateral choanal atresia requires prompt surgical intervention. Surgeons have historically used stents in the repair process, however their efficacy has come into question in recent years. We performed a systematic review to investigate, primarily, whether stents enjoy more favourable outcomes compared to stentless repair. We also explored the use of operative adjuncts, such as steroids, antibiotics, mitomycin C and KTP laser.

Methods: We performed a search of the Medline and Embase databases using a search strategy developed with the assistance of an academic librarian. Only full peer reviewed articles were included. Abstracts, posters, case reports and proceedings of academic conferences were excluded.

Results: We identified 48 unique articles for inclusion, composed of a meta-analysis, two randomised control trials and 45 case series. Pooled analysis of the two randomised control trials yielded no statistically significant difference in choanal patency between stented and stentless repair, but a statistically significant reduction in complications, specifically granulation tissue formation, was found in stentless repair. Data from case series were, overall, of mixed quality, making factors contributing to successful outcomes difficult to elucidate.

Conclusion: Overall, there is a lack of high quality evidence to support the use of either a stented or stentless approach to bilateral choanal atresia repair, however stentless repair may experience fewer complications. Operative techniques, such as the use of mucosal flaps, are worthy of future study. Authors call for future high quality randomised control trials to investigate this uncommon but important condition

Int J Pediatr Otorhinolaryngol. 2021 Oct 1;151:110926.

2. Overcorrection of Nasal Bone Fracture Reduction Can Be Minimized by Packing Removal

Kun Hwang 1, Sung Hwan Ma

Abstract

` We experienced 16 cases of overcorrection among 524 cases of packing following nasal bone fracture (NBF) reduction. In these cases, the packing was removed immediately.From July 2017 to October 2020, 535 cases of NBF were reduced by closed reduction. Nasal packing was applied in 524 cases (97.9%). In all cases, postoperative X-rays (both nasal bone lateral view and Water's view) were taken. The degree of overcorrection was measured in the nasal bone lateral views.Among the 524 patients who underwent nasal packing, overcorrection was noted in 16 cases (3.1%). The average degree of overcorrection was 2.09 ± 0.70 mm. In these patients, the packing was removed immediately and X-rays were taken directly after packing removal. The degree of overcorrection decreased; however, no significant difference was found (1.83 ± 0.71 mm, P = 0.081, [paired t test]).In this study, overcorrection was noted in 3.1% of patients in whom nasal packing was applied. After packing removal, the degree of overcorrection decreased but was not significant. Postoperative X-rays should be taken after reduction of NBF and nasal packing, and if overcorrection is noticed, the packing should be removed immediately.

J Craniofac Surg. 2021 Sep 10.

3. Woodruff's plexus-arterial or venous?

Cezar Octavian Morosanu 1, Craig Humphreys 2, Stephanie Egerton 2, Claire M Tierney 2

Abstract

Purpose: Woodruff's plexus is a vascular network located on the posterior lateral wall of the inferior meatus of the nasal cavity and it is generally considered to be responsible for posterior epistaxis. Despite being initially identified in 1949 as a venous plexus, discrepancies exist within literature regarding this anatomical structure, particularly its arterial or venous nature and its

association with posterior epistaxis. This systematic review aims to collate information pertaining to Woodruff's plexus and evaluate our current understanding of this vascular area.

Methods: The systematic review was performed using published data in PubMed, Google Scholar, Scopus, EBSCO and Web of Science platforms using keywords such as 'Woodruff', 'posterior' and 'plexus'. Articles referring to Woodruff's plexus were collected and analysed by independent reviewers.

Results: The search revealed 154 papers, out of which only 40 were included in the review. Out of this number only two papers were anatomical dissection studies, both of which identify the plexus as venous in nature. Seventeen studies describe the plexus as venous by citing these two papers. The remainder of the articles (23) consider Woodruff's plexus as arterial with variability in the reported arteries that supply it.

Conclusion: Woodruff's original description of a venous plexus is supported by modern anatomical studies. There are a multitude of reports that Woodruff's plexus is arterial in nature, despite the absence of existing anatomical studies to support this notion. This misconception has likely arisen due to clinical associations in relation to posterior epistaxis

Surg Radiol Anat. 2021 Oct 29.

4. Management of chronic rhinosinusitis with nasal polyps in Samter triad by low-dose ASA desensitization or dupilumab

Mattis Bertlich 1 2, Friedrich Ihler 1, Ines Bertlich 3, Bernhard G Weiss 1, Moritz Gröger 1, Frank Haubner 1

Abstract

Samter triad is a chronic condition where patients suffer from intolerance to aspirin, recurring nasal polyposis and bronchial asthma. Causative treatment is often hard. Potential approaches are the daily intake of acetylsalicylic acid (ASA), shunting arachidonic acid into the lipoxygenase pathway, and a subsequent habituation to this constant inflammatory stimulus. Alternatively, the paramount interleukins 4 and 13 may be antagonized by the monoclonal antibody dupilumab. Hence, we evaluated the daily intake of 100 mg ASA and systemic dupilumab (300 mg s.c. every 2 weeks) therapy in refractory patients for its efficacy and compliance.We conducted a retrospective chart review for the efficacy and compliance of both continuous ASA desensitization and systemic dupilumab therapy for refractory patients.Thirty-one patients were included in this retrospective chart review, mean follow-up was 20.4 ± 15.7 months. All patients underwent ASA desensitization. Twenty-one patients had eventually discontinued therapy after 5.8 ± 4.5 months; 11 for its side effects, 12 for its inefficacy. Twenty patients developed sinunasal complaints soon thereafter. Ten patients were still undergoing desensitization (mean

duration 15.3 ± 15.7 months). These patients had a higher prevalence of concomitant anti-asthmatic medication. Seventeen refractory patients underwent systemic dupilumab therapy. After 6.4 ± 2.7 months of treatment, sinunasal outcome test (68.1 ± 13.9 vs 20.1 ± 13.9) and visual analogue scales of overall complaints (8.7 ± 0.9 vs 2.2 ± 1.5) as well as endoscopic findings and olfactory function (brief smell identification test; 3.5 ± 2.6 vs 8.6 ± 2.4) all improved significantly.A considerable number of patients with Samter triad discontinued ASA desensitization, equally for ineffectiveness or side effects. If desensitization is to be effective, special care needs to be taken in respect to concomitant anti-asthmatic medication. Dupilumab is highly effective and safe in treating refractory patients.

Medicine (Baltimore). 2021 Oct 8;100(40):e27471.

5. Remote Training of Functional Endoscopic Sinus Surgery With Advanced Manufactured 3D Sinus Models and a Telemedicine System

Masanobu Suzuki 1 2, Erich Vyskocil 1, Kazuhiro Ogi 1, Kotaro Matoba 3, Yuji Nakamaru 2, Akihiro Homma 2, Peter J Wormald 1, Alkis J Psaltis 1

Abstract

Objective: Traditionally, cadaveric courses have been an important tool in surgical education for Functional Endoscopic Sinus Surgery (FESS). The recent COVID-19 pandemic, however, has had a significant global impact on such courses due to its travel restrictions, social distancing regulations, and infection risk. Here, we report the world-first remote (Functional Endoscopic Sinus Surgery) FESS training course between Japan and Australia, utilizing novel 3D-printed sinus models. We examined the feasibility and educational effect of the course conducted entirely remotely with encrypted telemedicine software. **Methods:** Three otolaryngologists in Hokkaido, Japan, were trained to perform frontal sinus dissections on novel 3D sinus models of increasing difficulty, by two rhinologists located in Adelaide, South Australia. The advanced manufactured sinus models were 3D printed from the Computed tomography (CT) scans of patients with chronic rhinosinusitis. Using Zoom and the Quintree telemedicine platform, the surgeons in Adelaide first lectured the Japanese surgeons on the Building Block Concept for a three Dimensional understanding of the frontal recess. They in real time directly supervised the surgeons as they planned and then performed the frontal sinus dissections. The Japanese surgeons were asked to complete a questionnaire pertaining to their experience and the time taken to perform the frontal dissection was recorded. The course was streamed to over 200 otolaryngologists worldwide. **Results:** All dissectors completed five frontal sinusotomies. The time to identify the frontal sinus drainage pathway (FSDP) significantly reduced from 1,292 ± 672 to 321 ± 267 s (p = 0.02), despite an increase in the difficulty of the frontal recess anatomy. Image analysis revealed the volume of FSDP was improved (2.36 ± 0.00 to 9.70 ± 1.49 ml, p =

0.014). Questionnaires showed the course's general benefit was 95.47 ± 5.13 in dissectors and 89.24 ± 15.75 in audiences. **Conclusion:** The combination of telemedicine software, web-conferencing technology, standardized 3D sinus models, and expert supervision, provides excellent training outcomes for surgeons in circumstances when classical surgical workshops cannot be realized.

Front Surg. 2021 Oct 1;8:746837.

6. Rhino-orbito-cerebral Mucormycosis: Pictorial Review

Vivek Pai 1, Rima Sansi 2, Ritesh Kharche 3, Sridevi Chaitanya Bandili 4, Bhujang Pai 2

Abstract

Mucormycosis (MCR) is a fulminant, potentially lethal, opportunistic fungal infection. Diabetes, immunocompromised states and elevated serum iron levels are the most important risk factors for contracting MCR infection. Recently, MCR co-infections have been observed in patients with COVID-19 disease owing to a complex interplay of metabolic factors and corticosteroid therapy. Rhino-orbito-cerebral mucormycosis (ROCM) is the most common clinical form of MCR infection and refers to infection of the nasal cavities, paranasal sinuses, neck spaces, orbits and intracranial structures. Sinonasal inoculation is typically the primary site of infection; the necrotising and angioinvasive properties of the fungus facilitate its spread into adjacent structures. In this review, we discuss the pertinent mycology and risk factors of MCR infection. The review also aims to acquaint the reader with the cross-sectional imaging appearances of ROCM and its complications. All the cases discussed in this pictorial essay are microbiologically and/or histopathologically proven cases of ROCM with concomitant COVID-19 infection.

Insights Imaging. 2021 Nov 12;12(1):167

7. Management of paranasal sinus osteomas: A comprehensive narrative review of the literature and an up-to-date grading system

Valentinos Sofokleous 1, Pavlos Maragoudakis 2, Efthymios Kyrodimos 3, Evangelos Giotakis 3

Abstract

Background: Surgical excision represents the unequivocal treatment modality for symptomatic paranasal sinus osteomas. However, the optimal surgical approach and the extent of the surgery, as well as the management stance in the case of an asymptomatic tumor, remain controversial.

Methods: The MeSH terms 'Osteoma', 'Nasal Cavity', and 'Paranasal Sinuses' were used to retrieve articles concerning the management of paranasal sinus osteomas that were published in the last 30 years, the vast majority of which comprised case reports of one or two cases. Original articles or large series of more than six cases were prioritized.

Results: Our review summarizes previous findings and opinions relevant to the management of symptomatic and asymptomatic paranasal sinus osteomas. The recent shifts in trends of their management are thoroughly discussed. Currently, an extension of the lesion through the anterior frontal sinus wall; an erosion of the posterior wall of the frontal sinus; a far-anterior intraorbital extension; an attachment to the orbital roof beyond the midorbital point; and some patient-specific adverse anatomic variations that may restrict access, are considered strong contraindications to a purely endoscopic approach. On the grounds of this thorough review, a new grading system for frontal and frontoethmoidal osteomas is proposed to allow better conformity to recent advancements and current clinical, research, and educational needs.

Conclusion: Over the past 30 years, endoscopic techniques have emerged as the new standard of care for favorably located paranasal sinus osteomas. Nonetheless, open approaches remain indispensable for the management of the more perplexing cases of frontal sinus osteomas

Am J Otolaryngol. Sep-Oct 2021;42(5):102644.

8. The use of flutamide for the neoadjuvant treatment of juvenile nasopharyngeal angiofibroma: a review of the literature comparing results by pubertal status and tumor stage

Graison Sitenga 1, Peter Granger 1, Keiffer Hepola 2, Jenna Aird 3, Peter T Silberstein 4

Abstract

Background: Juvenile nasopharyngeal angiofibroma (JNA) is a rare but potentially life-threatening fibrovascular tumor that is seen almost exclusively in adolescent males and usually presents with symptoms of nasal obstruction or severe epistaxis. The current gold standard of treatment consists of complete surgical resection; however, this is inherently challenging because of the tumor's invasive nature and a substantial risk of intraoperative hemorrhage. Flutamide, an anti-androgen antineoplastic agent, has been used preoperatively in attempts to reduce tumor volume allowing for surgical resection with more conservative procedural techniques and reduce intraoperative blood loss.

Methods: A literature review of PubMed and CINAHL was used to identify and analyze 29 male patients with JNA to determine the efficacy of the preoperative use of flutamide.

Results: Our analyses indicate that flutamide may be effective as a neoadjuvant agent by reducing tumor volume prior to resection in some patients but seemed to be more effective in the early stages of JNA without advanced tumor invasion. However, individual tumor response to flutamide was variable. Additionally, postpubertal patients seemed to demonstrate a greater reduction in tumor volume with flutamide compared to their prepubertal counterparts. Dosing regimen and side effects associated with flutamide therapy are also discussed.

Conclusion: Flutamide may be an effective neoadjuvant therapy in some cases of juvenile nasopharyngeal angiofibroma, but larger scale, case-control studies are likely needed to further expand on this conclusion. Postpubertal males with early-stage disease seemed to be the population that may benefit most from this treatment protocol

Int J Dermatol. 2021 Nov 8

9. HPV-Positive Status Is an Independent Factor Associated With Sinonasal Inverted Papilloma Recurrence

Sanna Viitasalo 1, Taru Ilmarinen 1, Markus Lilja 1, Maija Hytönen 1, Sari Hammarén-Malmi 1, Eeva Auvinen 2, Jaana Hagström 3 4, Joakim Dillner 5, Leena-Maija Aaltonen 1

Abstract

Objectives: The present study aimed to evaluate human papillomavirus (HPV) occurrence in sinonasal inverted papilloma (SNIP), and to assess factors associated with HPV positivity and SNIP recurrence.

Study design: Prospective study.

Methods: We prospectively collected clinical data and fresh tissue specimens from 90 consecutive patients treated for SNIP at Helsinki University Hospital, between 2015 and 2019. Fourteen patients with recurrent SNIP underwent repeated tumor sampling. All tissue specimens were analyzed for the presence of HPV. Factors associated with SNIP recurrence and HPV positivity were assessed.

Results: Among 107 SNIP specimens, 14 (13.1%) were positive for low-risk HPV and 6 (5.6%) were positive for high-risk HPV. HPV positivity was associated with an increased risk of recurrence (P = .004). Smoking was significantly associated with HPV positivity in SNIP (P = .01), but a history of HPV-related diseases or patient sexual habits did not correlate with HPV positivity. The recurrence rate was lower among patients with SNIP that underwent an attachment-oriented resection, compared to patients treated without attachment-oriented resections (78.6% vs 25.8%, P < .001).

Conclusions: The risk of SNIP recurrence was highly associated with 1) HPV positivity and 2) surgery without an attachment-oriented resection. Oncogenic HPV was rare in SNIP

Laryngoscope. 2021 Oct 25.

10. Confocal laser endomicroscopy - first application and validation of malignancy criteria

Nina Wenda 1, Ralf Kiesslich 2, Jan Gosepath 1

Abstract

Objectives: Confocal laser endomicroscopy (CLE) is a method for real-time in vivo visualization of mucosal changes on a cellular level. First investigations on head and neck carcinoma described the oropharyngeal application. The aim of this investigation is to elucidate, based on the criteria validated in the oropharynx, whether these can be transferred to endonasal mucosa.

Methods: CLE was performed with intravenous fluorescein staining in endoscopic sinus surgery in one patient with sinonasal inverted papilloma and another with squamous cell carcinoma. We compared cellular visualization of pathological changes to those of healthy mucosa in the same specimen as well to our former findings in the oropharynx.

Results: Endonasal CLE proved to be well feasible in the surgical setting and the transfer of malignancy criteria in analogy to histological examination could be optically retraced. Furthermore, additional criteria for tissue dignity assessment were obtained.

Conclusion: Our results suggest that endonasal CLE represents a valuable extension of the diagnostic repertoire available to date by an additional real-time analysis of nasal mucosa. This is of particular value in surgically challenging anatomical areas such as the paranasal sinuses. Further investigation and validation will be necessary

Laryngorhinootologie. 2021 Oct;100(10):818-823.