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

1. **Surgical management of frontal sinus inverted papilloma: a systematic review.**

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Abstract

OBJECTIVES/HYPOTHESIS:

Surgical management of frontal sinus (FS) inverted papilloma (IP) remains a significant challenge. This study systematically reviews the FS IP literature to delineate outcomes based on surgical strategy.

STUDY DESIGN:

Systematic review.

METHODS:

Cases for inclusion were identified by literature query for the terms frontal sinus and inverted papilloma between 1995 and 2010. Cases reported with sufficient outcomes data, defined as specific surgical approach and disease-free follow-up, were included. Statistical analysis was performed to identify significant risk factors for recurrence. The reported length of follow-up for each surgical approach was analyzed as an indicator of the strength of the reported literature for each approach.

RESULTS:

Fifty-seven cases were identified in 13 studies, with 49 cases deemed adequate for additional analysis. Twenty-four cases (49%) were primary, and 25 (51%) were secondary (residual or recurrent disease) IP. Bilateral FS involvement was reported in eight cases (16.3%). Surgical approaches employed included endoscopic frontal sinusotomy (EFS) in 21 (42.9%), endoscopic modified Lothrop (EML) in 10 (20.4%), osteoplastic flap in 13 (26.5%), and endoscopic trephination and EFS in five (10.2%) patients. The overall rate of recurrence was 22.4%. Mean follow-up time was 27 months.

CONCLUSIONS:

The recent reported literature of FS IP demonstrates high prevalence of recurrent and bilateral cases. Although statistical analysis of this accrued data is unable to delineate the best surgical approach for FS IP, more aggressive approaches frequently employed for secondary or bilateral disease may facilitate better disease control.

Laryngoscope. 2012 Jun;122(6):1205-9

2. Anatomical correlates of endonasal surgery for sinonasal malignancies.

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Abstract

In recent years, endoscopic endonasal techniques have been applied to the treatment of sinonasal malignancies. Comprehensive anatomical knowledge is essential to preserve oncological principles and minimize surgical morbidity. The bones that form the anterior cranial base are pneumatized and the sinuses provide surgical corridors for the endoscopic endonasal approach to the skull base. During endoscopic endonasal resection of sinonasal malignancies, usually, the intranasal portion of the tumor is first debulked to provide visualization of the margins and assess the extent of the tumor. Afterwards the tumor is completely removed and the margins of resection are defined. In case of dural resection, the reconstruction is done with vascularized tissue (septal flap or pericranial flap). Sinonasal malignant neoplasms that invade the skull base can be resected accordingly to oncological principles using endoscopic endonasal techniques. Profound knowledge of the endoscopic anatomy of the ventral cranial base is paramount in order to perform a safe resection and reconstruction.

Clin Anat. 2012 Jan;25(1):129-34.

3. Management of intractable spontaneous epistaxis

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Abstract

BACKGROUND:

Epistaxis is a common otolaryngology emergency and is often controlled with first-line interventions such as cautery, hemostatic agents, or anterior nasal packing. A subset of patients will continue to bleed and require more aggressive therapy.

METHODS:

Intractable spontaneous epistaxis was traditionally managed with posterior nasal packing and prolonged hospital admission. In an effort to reduce patient morbidity and shorten hospital stay, surgical and endovascular techniques have gained popularity. A literature review was conducted.

RESULTS:

Transnasal endoscopic sphenopalatine artery ligation and arterial embolization provide excellent control rates but the decision to choose one over the other can be challenging. The role of transnasal endoscopic anterior ethmoid artery ligation is unclear but may be considered in certain cases when bleeding localizes to the ethmoid region.

CONCLUSION:

This article will focus on the management of intractable spontaneous epistaxis and discuss the role of endoscopic arterial ligation and embolization as it pertains to this challenging clinical scenario.

Am J Rhinol Allergy. 2012 Jan-Feb;26(1):55-60

4. **Osteoma of the skull base and sinuses.**

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Abstract

Osteomata of the frontal and ethmoid sinuses have traditionally been surgically removed via external approaches. However, endoscopic techniques have increasingly been used for the surgical management of selected cases. Advances in visualization and instrumentation, as well as the excellent access provided by the Draf type 3 procedure, expanded the reach of endoscopes. We describe current limits of endoscopic approaches in the removal of osteomata from the frontal sinus and our algorithms for their management. We believe that the vast majority of frontal sinus osteomata can be managed endoscopically, and that only significant anterior or extreme infero-lateral extension constitute major limiting factors.

Otolaryngol Clin North Am. 2011 Aug;44(4):875-90

5. **[Fungal sinusitis].**

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Abstract

The incidence of fungal sinusitis is subjected to significant geographical variation. Basically, invasive and non-invasive fungal sinusitis is distinguished. Invasive fungal sinusitis is observed mainly in immunocompromised hosts. The diagnopsis is based on positive fungus detection combined with characteristic clinical features. The treatment of invasive fungal sinusitis is based on surgical debridement and systemic antifungal therapy. Non-invasive fungal sinusitis is either treated with surgery alone or surgery combined with systemic steroid therapy. The majority of studies showed no benefit of postoperative antimycotic medical treatment in patients with non-invasive fungal sinusitis.

Laryngorhinootologie. 2011 Jun;90(6):374-81;

6. Evidence for treatment strategies in sinonasal adenocarcinoma.

Lund VJ, Chisholm EJ, Takes RP, Suárez C, Mendenhall WM, Rinaldo A, Llorente JL, Terhaard CH, Rodrigo JP, Maughan E, Ferlito A.
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Abstract

Adenocarcinomas of various types account for 10% to 20% of all primary malignant neoplasms of the nasal cavity and paranasal sinuses. There is a general consensus that the optimal treatment of adenocarcinoma is surgery and postoperative radiotherapy. The purpose of this report was to review the results of this combined treatment as well as other treatment strategies and their outcome. Most series present outcome data from a heterogeneous group of patients, with a wide variety of tumor subtypes presenting at differing stages, who received a variety of treatment strategies. Surgical excision remains the treatment of choice. The choice of approach is determined by what will best allow complete excision of the disease. Endoscopic techniques, if feasible for complete removal of the tumor, offer results comparable to those of external approaches with lower morbidity. Although clear evidence to support the use of radiotherapy in sinonasal adenocarcinoma is difficult to obtain, local control rates of combined treatment strategies for advanced cases are comparable to less advanced cases with surgery alone, suggesting a positive role for postoperative radiotherapy. However, the importance of thorough surgical resection should be stressed.

Head Neck. 2012 Aug;34(8):1168-78.

7. Current diagnostic strategies for undifferentiated tumours of the nasal cavities and paranasal sinuses.

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Abstract

Several malignant tumours occurring in the sinonasal tract may present with an undifferentiated morphology. Overall, these lesions pose significant diagnostic difficulties for the surgical pathologist, especially in limited biopsy material, but their correct classification is becoming increasingly important for an appropriate treatment strategy. This review deals with the criteria for differential diagnosis of these neoplasms, with emphasis on recent advances in immunohistochemistry and molecular biology, as well as with previous progress in electron microscopy. Through careful microscopic examination of haematoxylin and eosin-stained sections, in the light of clinical information and imaging data, a list of differential diagnoses can be made and an appropriate panel of antibodies can be chosen to further categorize the tumour. An initial panel including cytokeratins, synaptophysin, S100 protein, desmin and CD45 may allow the classification of most lesions or may help to narrow the list of differential diagnoses. Further refinement can be obtained through second-line markers, including in-situ hybridization for Epstein-Barr virus, other neuroendocrine markers, melanocytic markers, myogenin, CD99, other lymphocyte markers, and CD138 and light chains. Finally, molecular analysis can further assist in the recognition of specific entities such as nuclear protein in testis midline carcinoma, Ewing's sarcoma/peripheral neuroectodermal tumour, alveolar rhadbomyosarcoma, and poorly differentiated synovial sarcoma.

Histopathology. 2011 Dec;59(6):1034-45.

8. Bilateral vascular supply in juvenile nasopharyngeal angiofibromas

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Abstract

OBJECTIVES:

Juvenile nasopharyngeal angiofibroma (JNA) is a rare, benign tumor of the nasopharynx, exclusively affecting males in their teens and twenties. Historically, it has been thought that JNAs primarily receive their blood supply from the ipsilateral external carotid system. We demonstrate in our case series and literature review that bilateral vascular supply in these tumors is, in fact, very common.

STUDY DESIGN:

Case series and literature review.

METHODS:

We present four consecutive cases of JNA in a three-year period from a major tertiary care center. A literature review on the topic of vascular supply in JNA was performed.

RESULTS:

The first patient's preoperative angiogram demonstrated only right-sided blood supply. However, significant bleeding was encountered, and an intraoperative angiogram showed significant new vascularization from the left ascending pharyngeal artery (APA), which was embolized. The surgery was completed successfully without further significant hemorrhage after converting to an open approach. Preoperative angiograms from the next three patients demonstrated bilateral vascular supply. Embolization and endoscopic resection was successful in these cases. Review of the literature demonstrates that bilateral vascular supply is not commonly documented; however, it may be more frequent than previously thought. Other series demonstrate bilateral vascularity from 0% to 100%. Combining patients from nine studies, including our own, we found that 57 of 157 (36%) patients had tumors with bilateral vascular supply.

CONCLUSIONS:

Bilateral vascular supply may be an underappreciated factor in JNA, and thorough radiographic investigation via angiography of bilateral carotid systems should be routinely done preoperatively.

Laryngoscope. 2011 Mar;121(3):639-43

9. Allergen immunotherapy: 100 years, but it does not look like.

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Abstract

Allergen immunotherapy (AIT) is the only treatment able to act on the causes and not merely on the symptoms of allergy. AIT was introduced 100 years ago but remained an empirical treatment for more than 40 years, when the first controlled trial in 1954 opened the era of scientific evidence. A major advance was the introduction of venom immunotherapy to prevent anaphylaxis from insect stings in 1978. Concerning inhalant allergens, currently AIT may be administered in two forms, subcutaneous (SCIT), and sublingual immunotherapy (SLIT). A large number of trials, globally analyzed in a number of meta-analyses, gave sound evidence to the efficacy and safety of SCIT and SLIT in allergic rhinitis and asthma. Adverse systemic reactions are still a drawback for SCIT while safety and tolerability of SLIT are very good, provided recommended doses and schedules of administration are used A significant advance for SLIT development was the registration in Europe of the standardized quality tablets. New applications, such as food allergy and atopic dermatitis, as well as new routes of administration, are currently under evaluation. After 100 years of use, AIT has a central role in the management of allergy and the ongoing improvement seems able to warrant to AIT an even brighter future.

Eur Ann Allergy Clin Immunol. 2012 Jun;44(3):99-106

10. Chapter 2: Skin testing in allergy.

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Abstract

Skin tests are used in addition to a directed history and physical exam to exclude or confirm IgE-mediated diseases such as allergic rhinitis, asthma, and anaphylaxis to aeroallergens, foods, insect venoms, and certain drugs. There are two types of skin testing used in clinical practice. These include percutaneous testing (prick or puncture) and intracutaneous testing (intradermal). Prick testing involves introducing a needle into the upper layers of the skin through a drop of allergen extract and gently lifting the epidermis up. Other devices are available for prick testing. Intracutaneous (intradermal) testing involves injecting a small amount of allergen (0.01-0.02 mL) into the dermis. The release of preformed histamine from mast cells causes increased vascular permeability via smooth muscle contraction and development of a wheal; inflammatory mediators initiate a neural reflex causing vasodilatation, leading to erythema (the flare). Prick testing methods are the initial technique for detecting the presence of IgE. They may correlate better with clinical sensitivity and are more specific but less sensitive than intradermal testing. Sites of skin testing include the back and the volar aspect of the arm. Although the back is more reactive, the difference is minimal. By skin testing on the arm, the patient can witness the emergence and often sense the pruritus of the skin test reaction. Because more patients are sensitized (have IgE antibodies and positive skin test reactions) than have current symptoms, the diagnosis of allergy can be made only by correlating skin testing results with the presence of clinical symptoms.

Allergy Asthma Proc. 2012 May-Jun;33 Suppl 1:S6-8