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**Preface: Surgery of the Nose and Paranasal Sinuses: Principles and Concepts**  
Orrett E. Ogle and Harry Dym  

**Surgical Anatomy of the Nasal Cavity and Paranasal Sinuses**  
Orrett E. Ogle, Robert J. Weinstock, and Ezra Friedman  

The oral cavity and its bony components (maxilla and mandible), along with the nose and its related sinuses, constitute most of the face. Because of their proximity, disease in one may affect the other, whereas trauma of the midface will involve bones common to the oral cavity, nose, and paranasal sinuses. The two serve important life-supporting functions, being the portals for nutrition and respiration. The paranasal sinuses are pneumatic cavities lined by mucous membrane and communicate directly with the nasal cavity. This article presents a brief but relevant view of the surgical anatomy of the nasal cavity and paranasal sinuses.

**Instrumentation and Techniques for Examination of the Ear, Nose, Throat, and Sinus**  
Marsha James and Orville Palmer  

Optimal and accurate management of any patient depends on a detailed history and thorough physical examination. The information garnered dictates the definitive management of the patient. Adequate examination of the head and neck, particularly the upper aerodigestive tract, presents a unique challenge because much of the area to be examined is not easily accessible to direct visualization. However, advances in medical technology have prompted the evolution of the instrumentation and the techniques used to examine this anatomic region. This evolution allows for a more informative assessment of the patient and a more comfortable experience.

**Imaging of the Paranasal Sinuses**  
R. Joshua Dym, Daniel Masri, and Keivan Shifteh  

Evaluation of the paranasal sinuses is often performed in a purely clinical fashion, without the need for imaging. However, in certain instances imaging may be deemed valuable or even necessary in helping to solve a diagnostic dilemma, confirm a suspected diagnosis, evaluate the extent of a known condition, or assess for an underlying cause of the condition. Computed tomography (CT) and magnetic resonance imaging (MRI) can be useful in confirming a suspected diagnosis or providing additional information regarding causes or complications. CT and MRI play complementary roles in evaluating the rare tumors that may involve the paranasal sinuses.

**Microorganisms of the Nose and Paranasal Sinuses**  
Richard H. Haug  

The endogenous normal flora of the nose and paranasal sinuses works to create an environment of homeostasis within the region. This homeostasis can be interrupted by eliminating the anatomic barriers created by the skin, bone, and mucosa, such as after trauma and/or surgery; by altering the atmosphere of the surroundings, such as the creation of an anaerobic environment by obstruction of the sinus ostia or
foramina; or by a change in the normal flora of the region. To fully understand the microbiological environment of this region, the normal flora of the nose and paranasal sinuses must be understood.

**Tonsillitis, Peritonsillar and Lateral Pharyngeal Abscesses**  
Jonathan M. Tagliareni and Earl I. Clarkson

Oral and maxillofacial surgeons are occasionally called on to diagnose, treat, and rule out peritonsillar abscesses. In this article, the anatomy of the peritonsillar area, its contents, surgical approaches, and possible complications are discussed.

**Allergic Rhinitis and the Unified Airway: A Therapeutic Dilemma**  
Leslie Robin Halpern

Inflammatory diseases of the upper and lower airways act not as individual entities but more as an integrated unit—the concept of the unified airway. This article focuses on the role of allergic rhinitis (AR) in the unified airway. An overview of AR and its association with upper and lower airway diseases is provided. AR is described in terms of its epidemiology, pathophysiology, and recent options for successful treatment. The recent use of immunotherapy and its future potential as a prophylactic method for the treatment of AR and concomitant diseases within the unified airway are emphasized.

**Epistaxis and Hemostatic Devices**  
Levon Nikoyan and Stanley Matthews

Epistaxis is a common medical problem that rarely requires surgical intervention. However, when medical or surgical intervention is required, epistaxis can sometimes be difficult to control. Knowledge of nasopharyngeal anatomy is absolutely essential to the proper management of epistaxis. This article begins with a discussion of the essential anatomy of the region and the basic epidemiology of epistaxis, followed by a review of initial treatment as well as devices and procedures specifically designed for the control of epistaxis. Advances and new devices for the control of epistaxis are described.

**Surgical Management of Nasal Obstruction**  
Jason A. Moche and Orville Palmer

The proper evaluation of the patient with nasal obstruction relies on a comprehensive history and physical examination. Once the site of obstruction is accurately identified, the patient may benefit from a trial of medical management. At times however, the definitive treatment of nasal obstruction relies on surgical management. Recognizing the nasal septum, nasal valve, and turbinates as possible sites of obstruction and addressing them accordingly can dramatically improve a patient’s nasal breathing. Conservative resection of septal cartilage, submucous reduction of the inferior turbinate, and structural grafting of the nasal valve when appropriate will provide the optimal improvement in nasal airflow and allow for the most stable results.

**Oroantral Communication**  
Harry Dym and Joshua C. Wolf

The practicing oral and maxillofacial surgeon treating patients with oroantral communication (OAC)/oroantral fistulas should be familiar and competent with
the various treatment options available. Multiple techniques are available from purely soft tissue flaps, which have proved to be successful over time, to a combination of hard tissue grafts (autologous, alloplastic, or allograft), which can prove to be useful with the increased demand for implant restorations. Although different procedures have proved to be successful, all are premised on the treatment of any underlying sinusitis, which is associated with a higher risk of recurrent OAC.

Benign Cysts and Tumors of the Paranasal Sinuses 249
Joseph E. Pierse and Avichai Stern

To thoroughly understand the biology of any lesion and render the appropriate management, clear and accurate definitions are paramount. For benign cysts and tumors of the oral maxillofacial region, an accurate depiction of these lesions needs to be elucidated to provide both the treating surgeon and the patient with a clear understanding of the course of treatment and the outcome.

Management of Frontal Sinus Fractures 265
Ladi Doonquah, Phillip Brown, and Warren Mullings

The traditional treatment of frontal sinus fractures is undergoing a review by many clinicians. This review will undoubtedly contribute to the existing controversy surrounding the management of patients with this condition. This article seeks to further the review and suggest the authors’ perspective on a more appropriate approach to the care of patients with frontal sinus injuries.

Endoscopic Surgery of the Nose and Paranasal Sinus 275
Orville Palmer, Jason A. Moche, and Stanley Matthews

Mucosal preservation is of paramount importance in the diagnosis and surgical management of the sinonasal tract. The endoscope revolutionized the practice of endoscopic nasal surgery. As a result, external sinus surgery is performed less frequently today, and more emphasis is placed on functional endoscopy and preservation of normal anatomy. Endoscopic surgery of the nose and paranasal sinus has provided improved surgical outcomes and has shortened the length of stay in hospital. It has also become a valuable teaching tool.

Revision Sinus Surgery 285
Satish Govindaraj, Abib Agbetoba, and Samuel Becker

Revision sinus surgery for inflammatory disease has been revolutionized by endoscopic sinus surgery. Clinical trials have shown statistically significant positive outcome data for patient symptoms and quality of life, as well as improvements in objective findings on postoperative nasal endoscopy and computed tomography imaging for patients undergoing revision sinus surgery. The keys to successful revision surgery are adjunctive medical management, aggressive postoperative debridement, mucosal preservation, and removal of osteitic bone. Both the physician and patient should also understand the underlying disease process and comorbid factors so that anticipated postoperative outcomes can be met with realistic expectations.
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Mohammed Nadershah and Andrew Salama

Surgical removal of the major salivary glands is a common task for the oral and maxillofacial surgeon. The major salivary glands have complex anatomic relationships with the surrounding neurovascular structures, and a thorough understanding of the surgical anatomy is essential for any surgeon involved in the management of salivary gland disease. This article reviews the indications, surgical anatomy, diagnostic evaluation, and surgical techniques for removal of the major salivary glands.

An Update on Squamous Carcinoma of the Oral Cavity, Oropharynx, and Maxillary Sinus 307
Joshua E. Lubek and Lewis Clayman

There are more than 45,000 new cancer cases involving the head and neck diagnosed each year within the United States. Squamous cell carcinoma accounts for the majority of cases, often occurring within the oral cavity and oropharynx. This article reviews current literature and various controversial topics involving the diagnosis and treatment strategies for patients with oral cavity/oropharyngeal cancers. Although not considered cancer within the oral cavity, maxillary sinus squamous cell carcinoma is discussed.

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