Rhinology and Endoscopic Skull Base Surgery
What is it? How can I help?

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Objective

• Learn about Rhinology, Endoscopic Skull Base Surgery sub-specialty
• Recognize diseases that are commonly treated by a Rhinologist
• Recognize how a Rhinologist and Pediatric Otolaryngologist can collaborate in the treatment of rare but interesting cases

I have no financial disclosures
Rhinology

• Sub-specialty within Otolaryngology Head and Neck Surgery
• Diagnosis, medical and surgical treatment of the nose and paranasal sinuses
• Diagnosis and treatment of anterior skull base condition
• The American Rhinologic Society (ARS) was created in 1954 to advance education and research in the care of patients with rhinologic disorders
Rhinology

• Sinus surgery
  • Originated in Egypt
    • Brain removed through the ethmoid sinuses as part of the mummification process
  • 1500-1600’s
    • Maxillary sinusitis treated by draining the sinus through a tooth socket
  • 1800’s
    • Maxillary sinus treated through an opening in the canine fossae
  • 1920’s
    • Advances in paranasal and anterior skull base anatomy
    • Intranasal Ethmoidectomy- “Easiest way to kill a patient” (Dr. Harris Mosher, Boston, MA)
Rhinology

• 1950’s
  • Introduction of telescopes

• 1990’s- Present day
  • Advances in endoscope technology
    • HD
    • 3D
    • 4K
  • Computer assisted sinus surgery
  • Endoscopic surgery beyond the sinuses
Chronic rhinosinusitis

• With and without polyps
• Cystic fibrosis
• Allergic fungal sinusitis
FESS

• Surgical procedure which reestablishes the normal anatomical sinus drainage
• Uses endoscopic techniques, video imaging
• Continues to advance using technology such as balloon dilation, absorbable and drug eluting stents, smaller instruments and image guidance
Paranasal sinus mucoceles

- Headaches
- Distortion of facial anatomy
- Proptosis, vision loss, diplopia
Paranasal sinus osteomas

- Slow-growing benign bony tumors
- Asymptomatic
- Headaches
- Distortion of facial skeleton
Juvenile Nasopharyngeal Angiofibroma

- Benign vascular tumor
- Posterior nasal cavity and nasopharynx
- Epistaxis
- Prepubertal and adolescent males
- Hormonal hypothesis
  - Higher levels of growth hormone receptors and vascular endothelial growth factor (VEGF)
- Neuro-endocrine tumor hypothesis
  - Paraganglionic cells of the terminal branches of the maxillary artery
    - Tumor suppressor gene p53
    - Her-2/neu oncogene.
Juvenile Nasopharyngeal Angiofibroma
Endoscopic Skull Base Surgery
Transphenoidal endoscopic resection of pituitary tumors

- Pituitary macroadenoma
- Pituitary apoplexy (hematoma)
- Sellar tumors
CSF leak repair

- Benign intracranial hypertension
- Iatrogenic
- Traumatic
Beyond the nose

• Endoscopic dracrocystorhinostomy

• Endoscopic orbital decompression for Grave’s orbitopathy
Conclusion:

• Advances in endoscopic sinus and skull base surgery allows for:
  • Minimally invasive procedures
  • Faster recovery
  • Less morbidity

• Pediatric ENT and Rhinologist combined cases
  • One stop shop
  • Expertise
  • Technology
  • Better outcomes
Conditions we treat

- Allergic rhinitis
- Non-allergic rhinitis
- Vasomotor rhinitis
- Epistaxis
- Anosmia and disorders of smell and taste
- Facial pain
- Headaches
- Deviated nasal septum
- Inferior turbinate hypertrophy
- Concha bullosa
- Acute sinusitis and its complications
- Chronic sinusitis with and without polyps
- Allergic fungal sinusitis
- Paranasal sinus mycetomas
- Invasive fungal sinusitis
- Cystic fibrosis
- Sleep apnea

- Paranasal sinus mucoceles
- Paranasal sinus Osteomas
- Paranasal sinus tumors
  - JNA, inverted papilloma
  - Mucosal melanoma, SCCA, Sarcomas
- Nasal vestibule stenosis
- Encephaloceles
- CSF rhinorrhea
- Pituitary tumors
- Clivus tumors
  - chordomas
- Skull base tumors
  - Esthesioneuroblastoma
  - Malignancy (eg SNUC)
- Pneumocephalus
- Cavernous sinus lesions
- Graves orbitopathy
- Epiphora (endoscopic DCR)
- Optic nerve decompression
- Anterior brain stem lesions