

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)

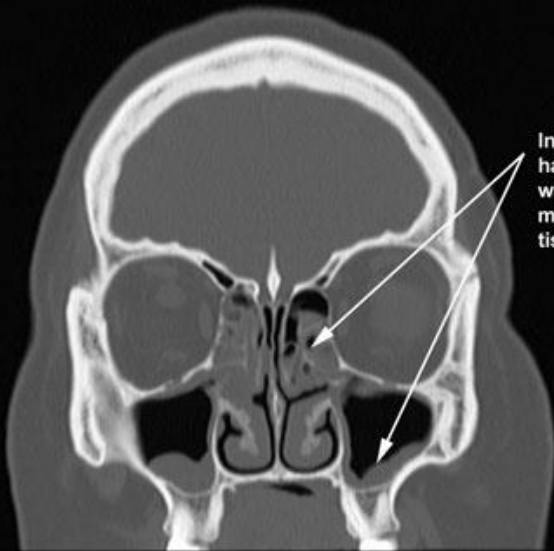
Rhinology

- 1950's
 - Introduction of telescopes

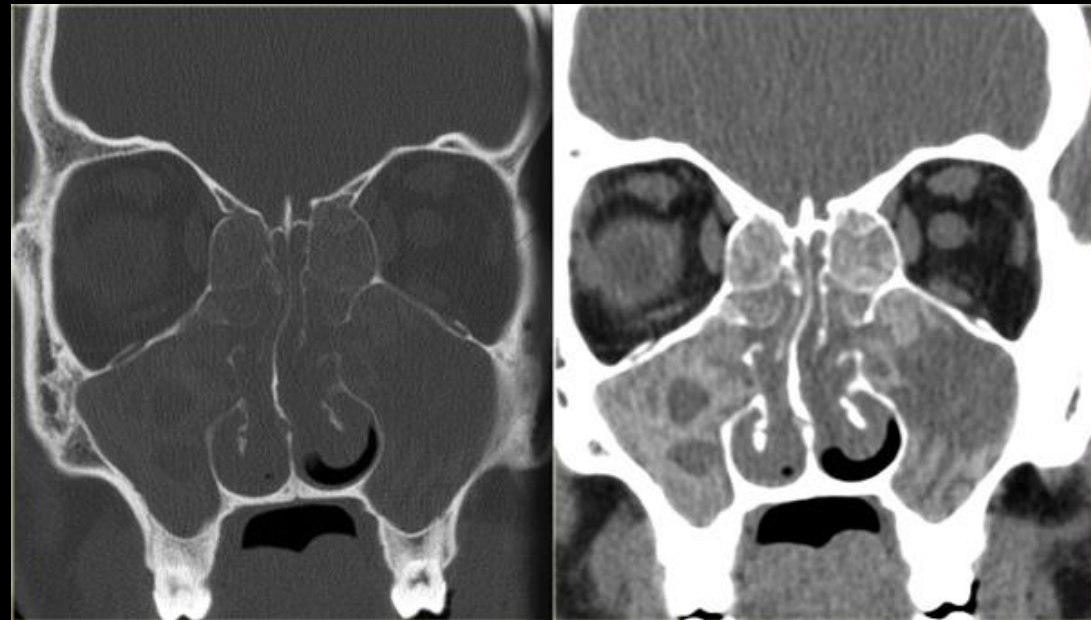
- 1990's- Present day
 - Advances in endoscope technology
 - HD
 - 3D
 - 4K
 - Computer assisted sinus surgery
 - Endoscopic surgery beyond the sinuses

Chronic rhinosinusitis

- With and without polyps
- Cystic fibrosis
- Allergic fungal sinusitis



Inflamed sinuses have more gray which can be excess mucus or swollen tissue linings



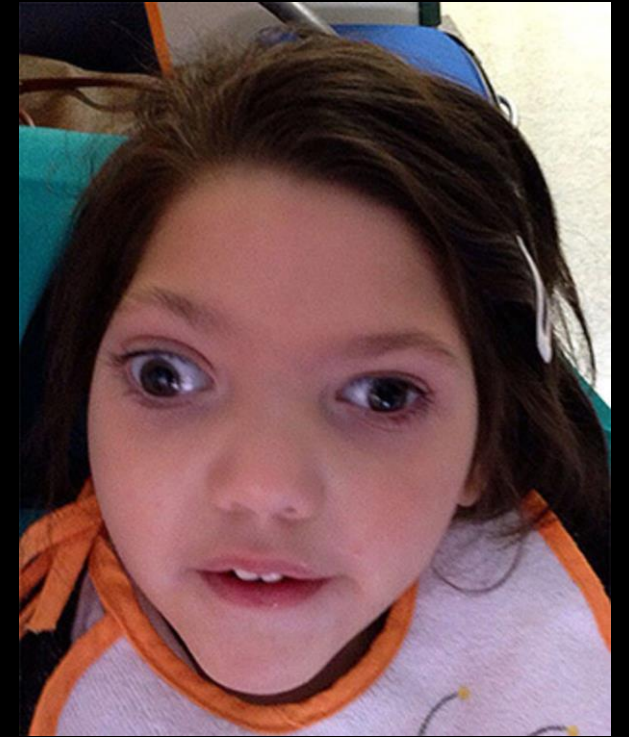
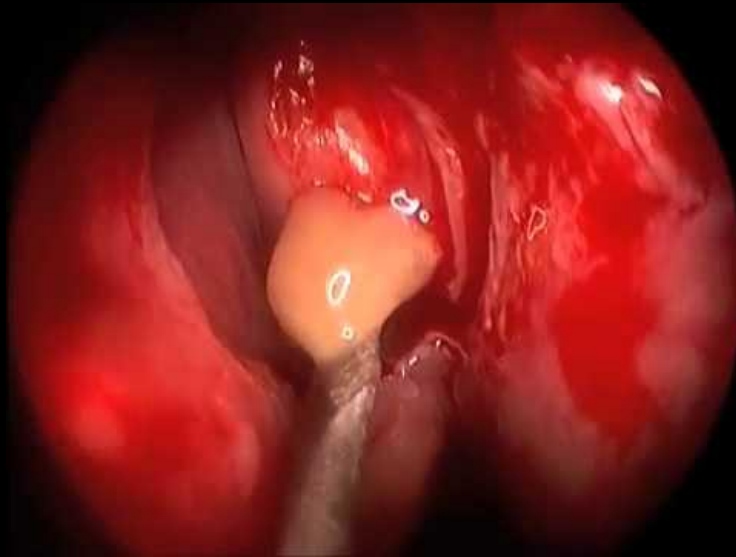
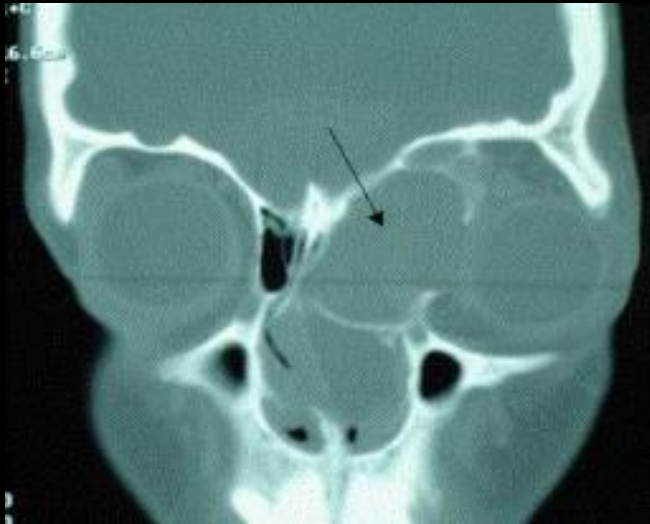
FESS

- 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



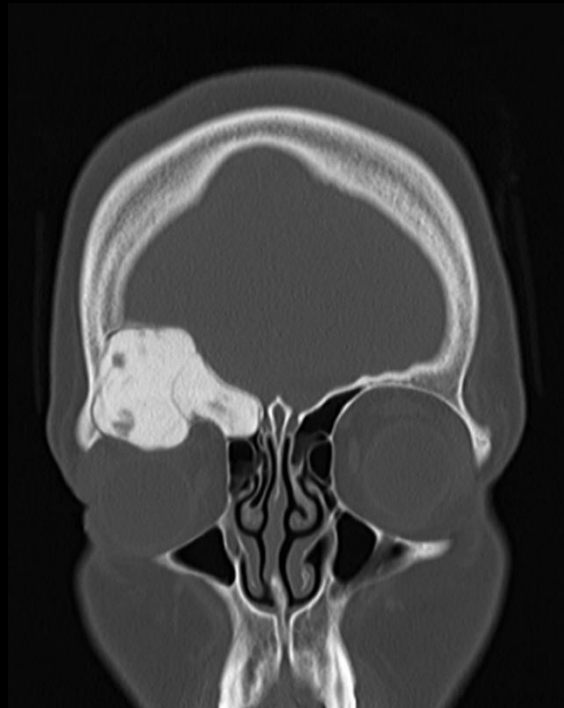
Paranasal sinus mucoceles

- 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



Figure 1.

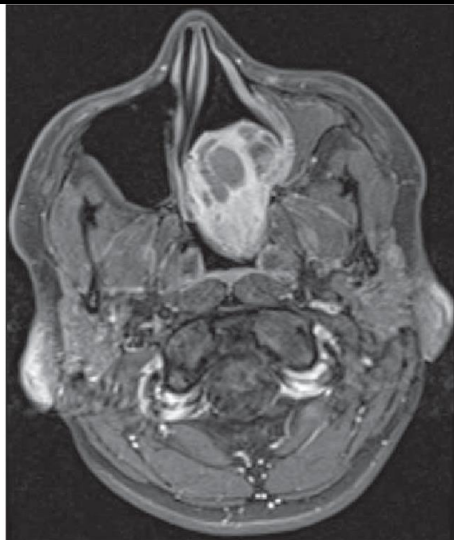


Figure 3.

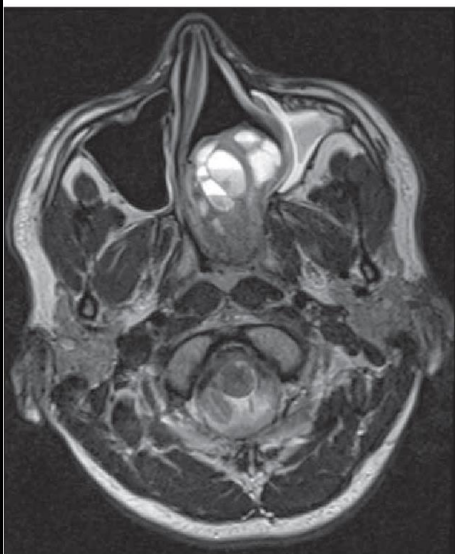


Figure 2.

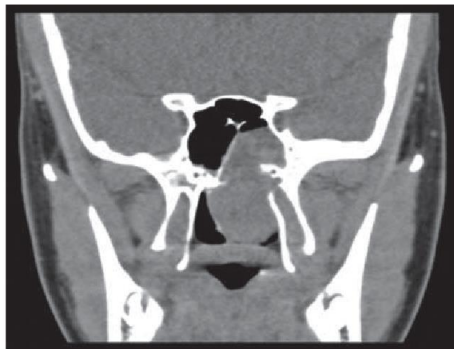


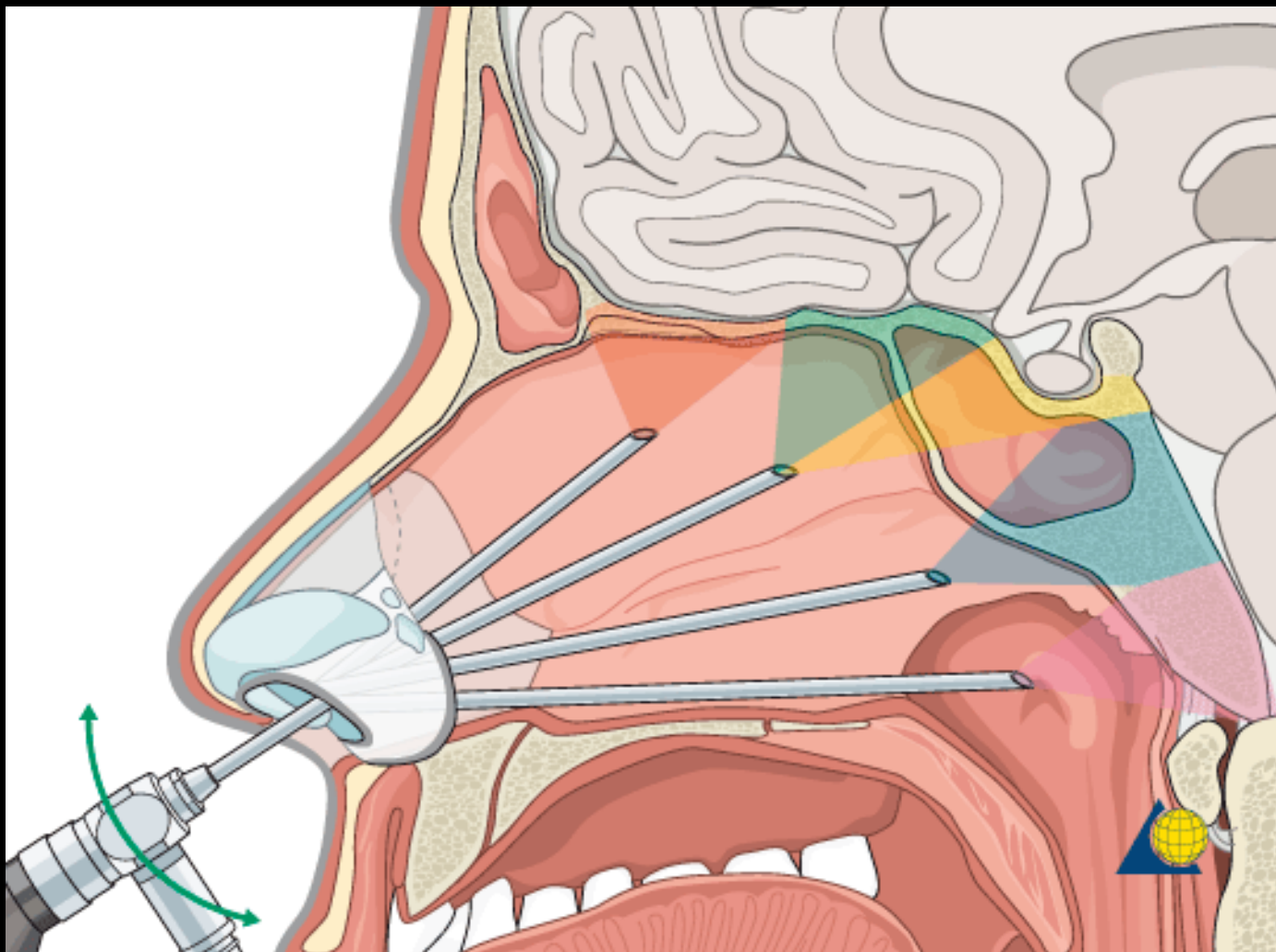
Figure 4.



W 501 : L 373

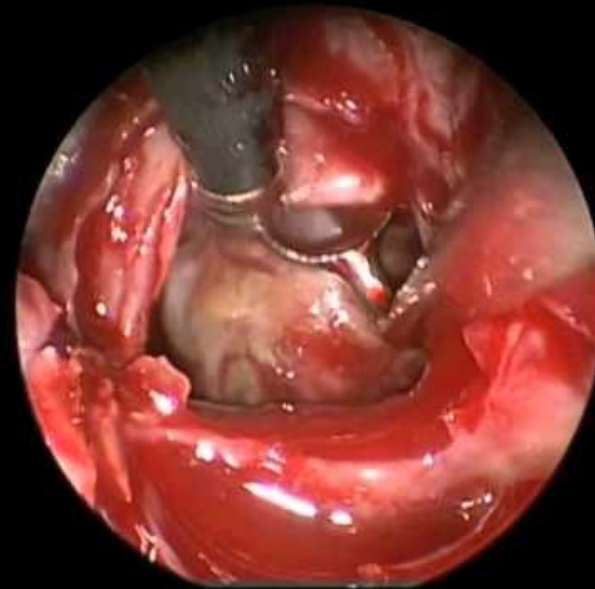
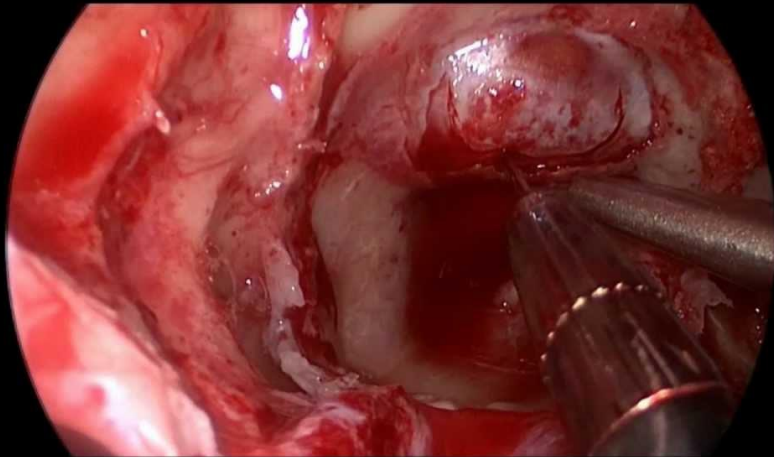
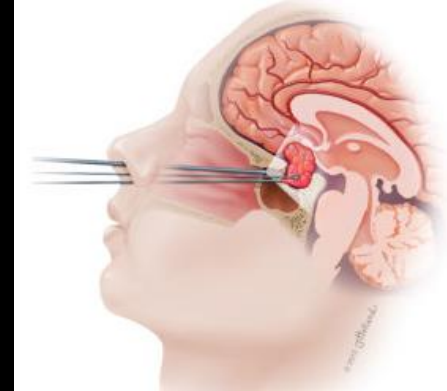
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Endoscopic Skull Base Surgery



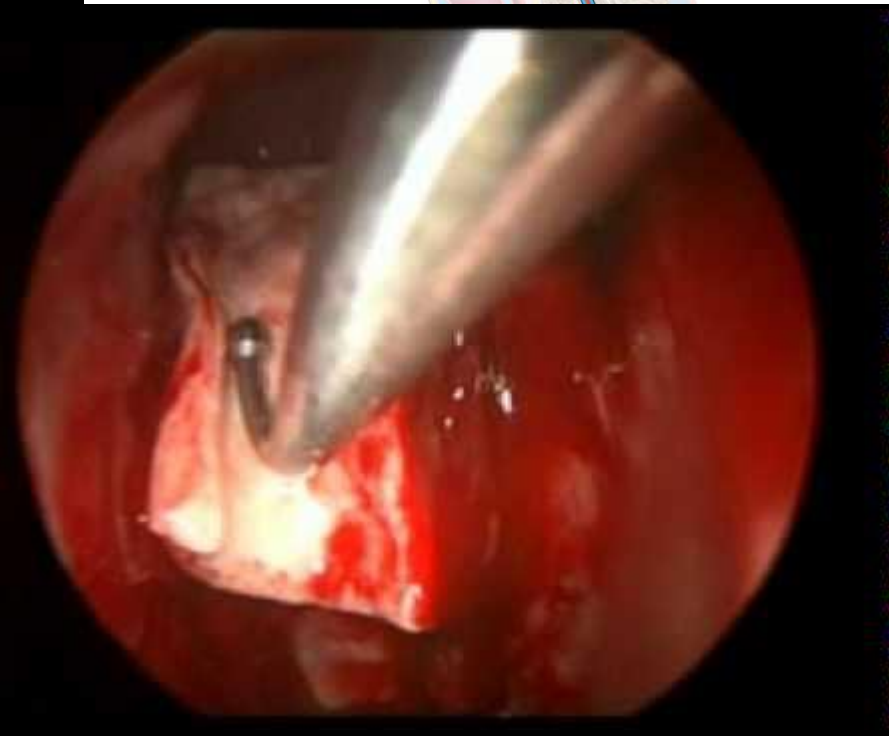
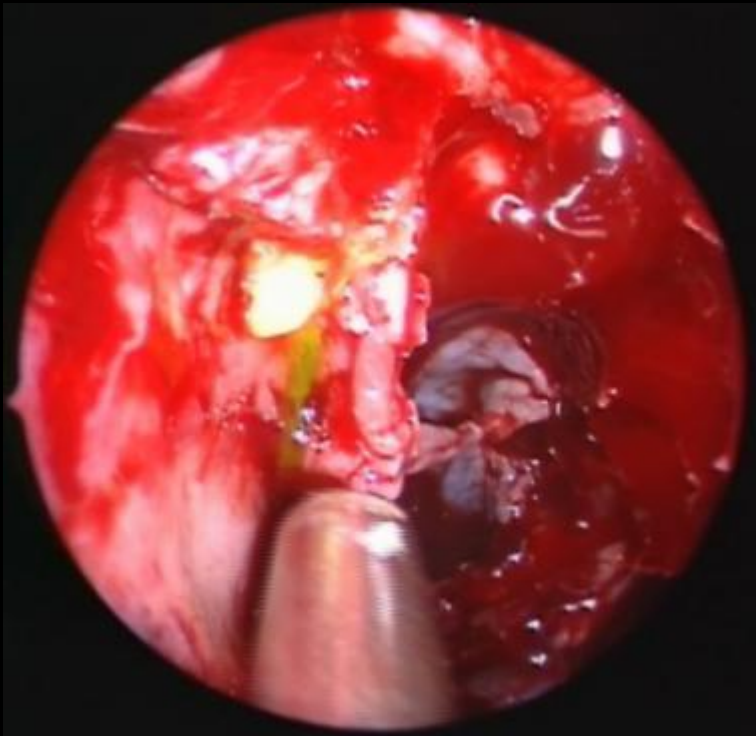
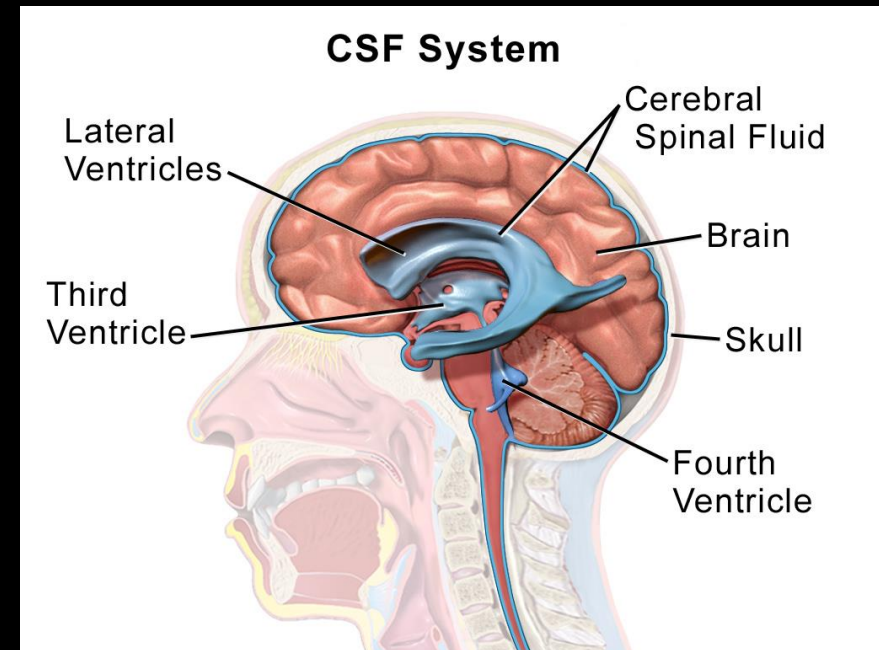
Transphenoidal endoscopic resection of pituitary tumors

- Pituitary macroadenoma
- Pituitary apoplexy (hematoma)
- Sellar tumors



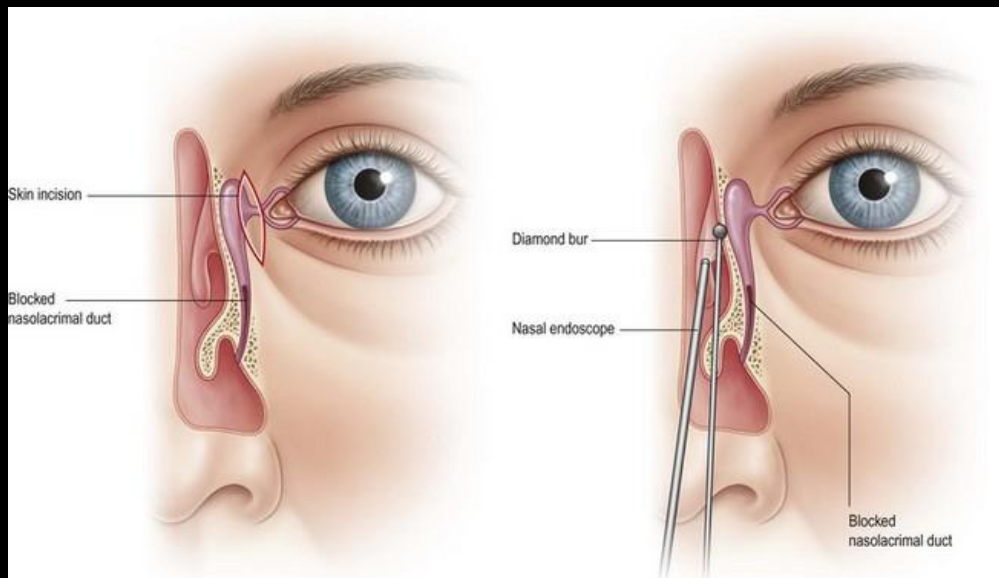
CSF leak repair

- Benign intracranial hypertension
- Iatrogenic
- Traumatic

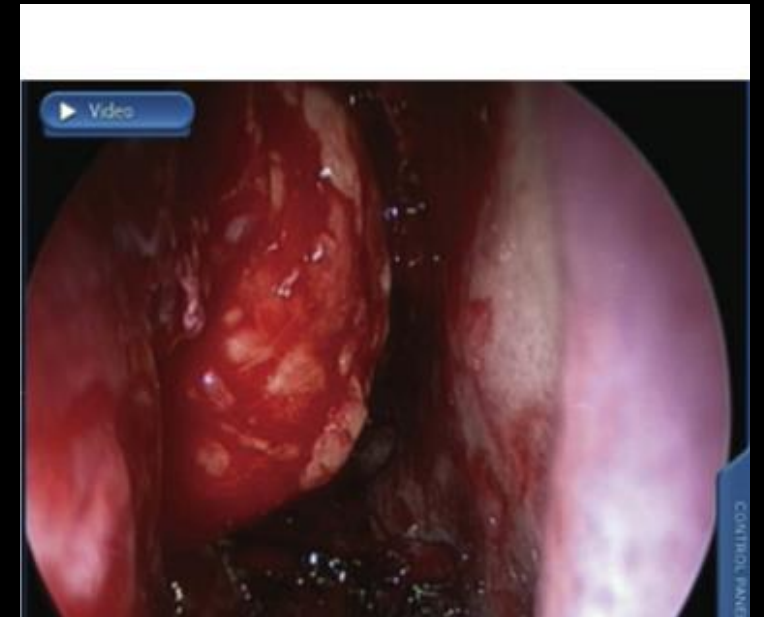


Beyond the nose

- Endoscopic dacryocystorhinostomy



- 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