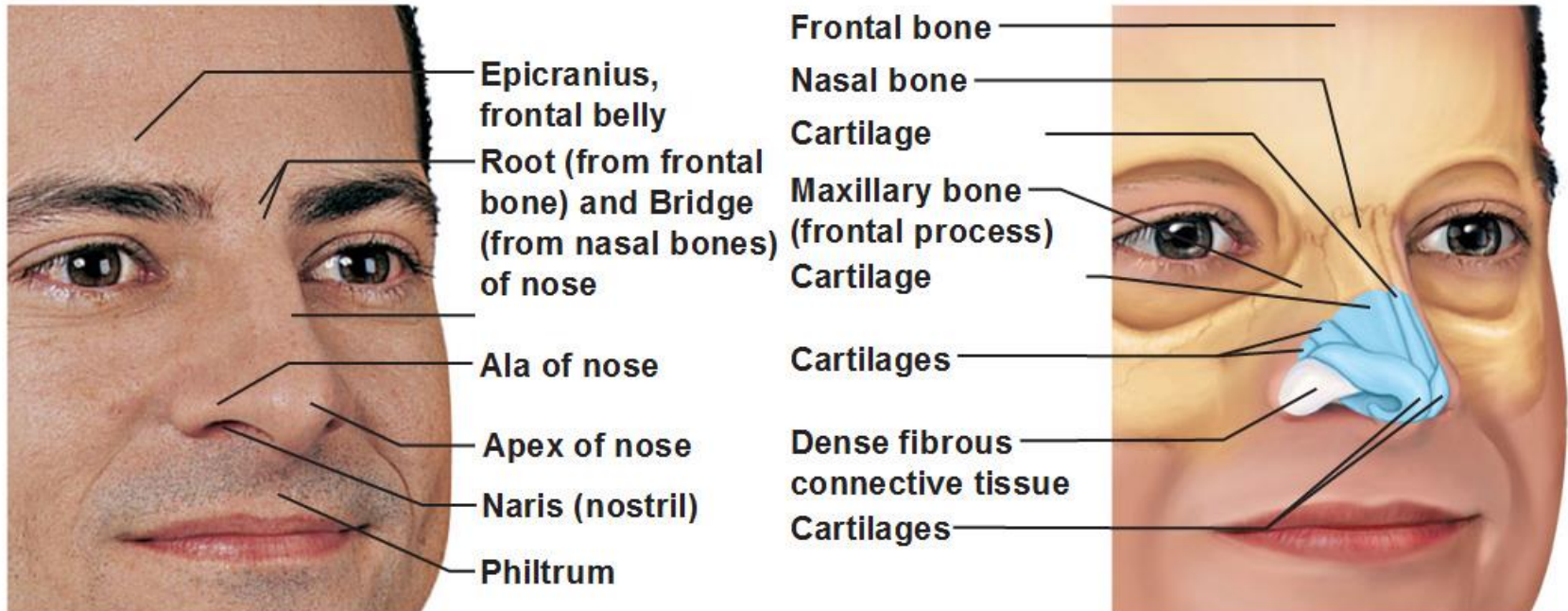


# ANATOMY OF THE NOSE & PARANASAL SINUSES

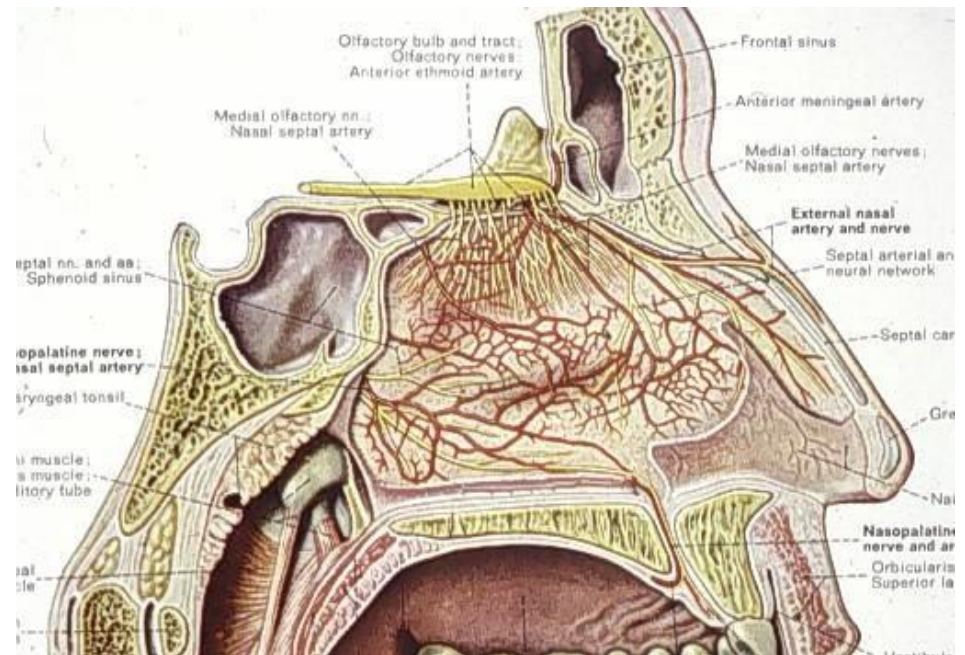
# THE EXTERNAL NOSE

## The Nose (external)



# The Nasal Vestibule

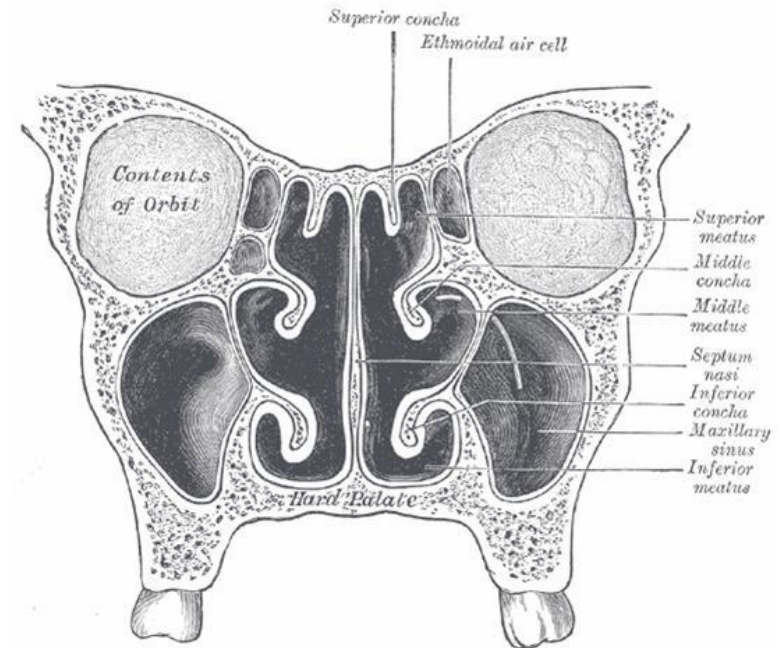
- The skin lined area of the nasal cavity



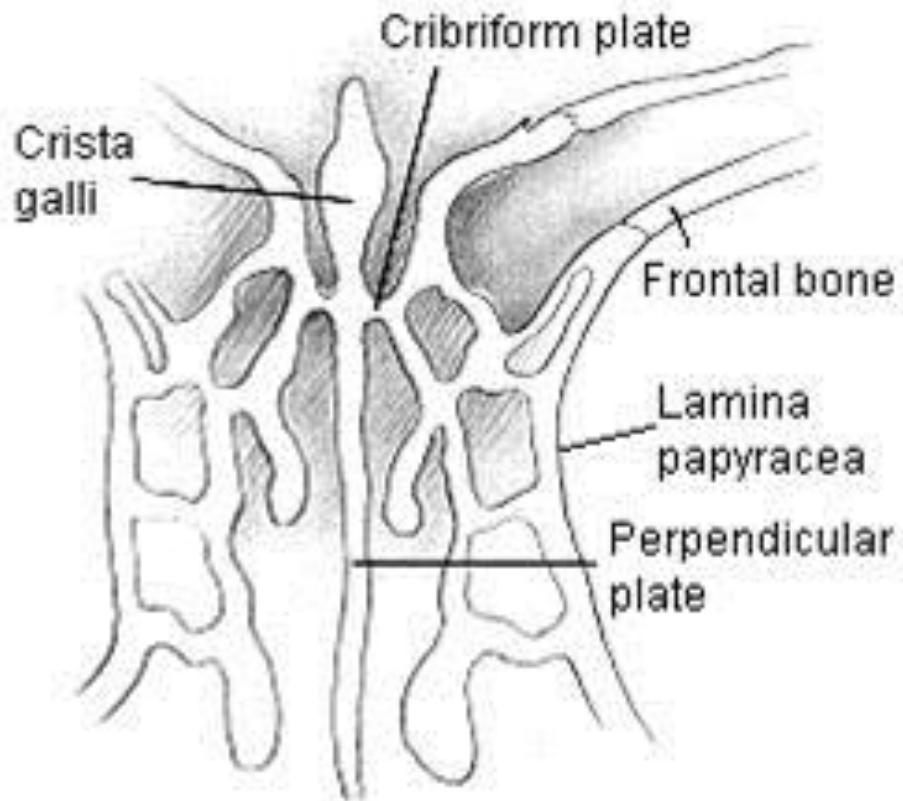
# The Nasal Cavity Proper

## Lined by mucosa

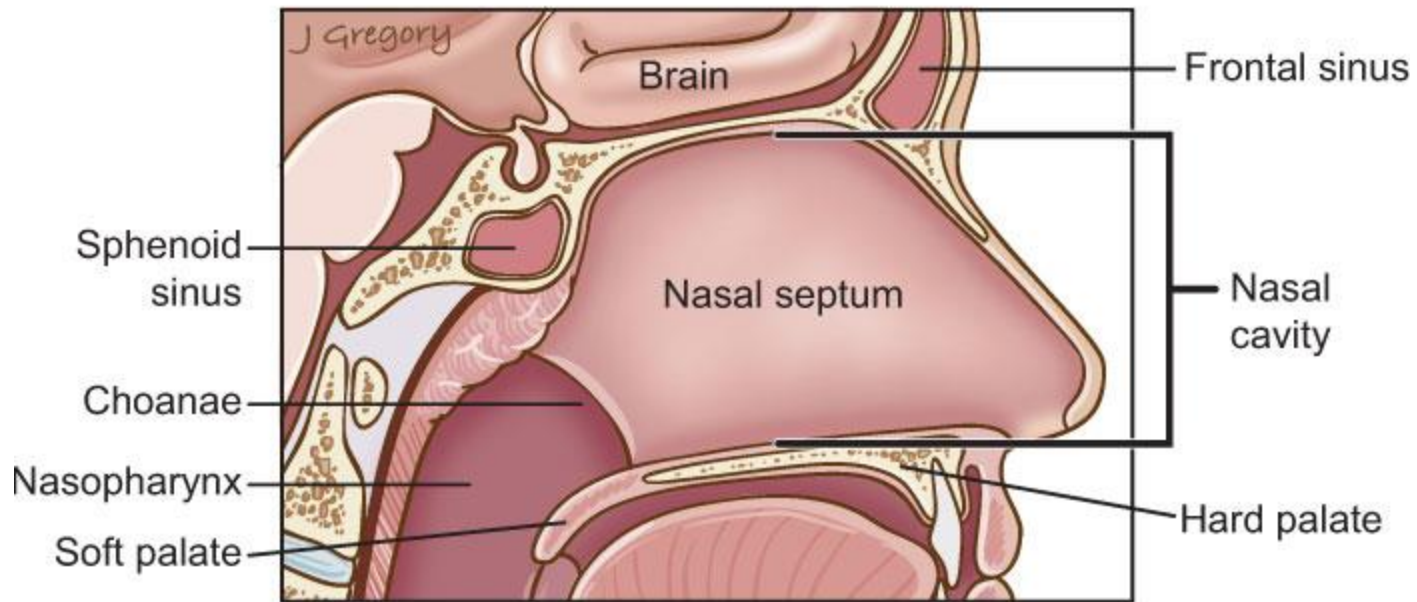
- Roof
  - Skull base
  - Olfactory nerve
- Floor
  - Hard / soft palate
- Lateral wall
  - Maxillary sinus
  - Medial wall of the orbit
- Medial wall
  - Septum
- It has 3 turbinates : inferior turbinate , middle turbinate and sometimes superior turbinate



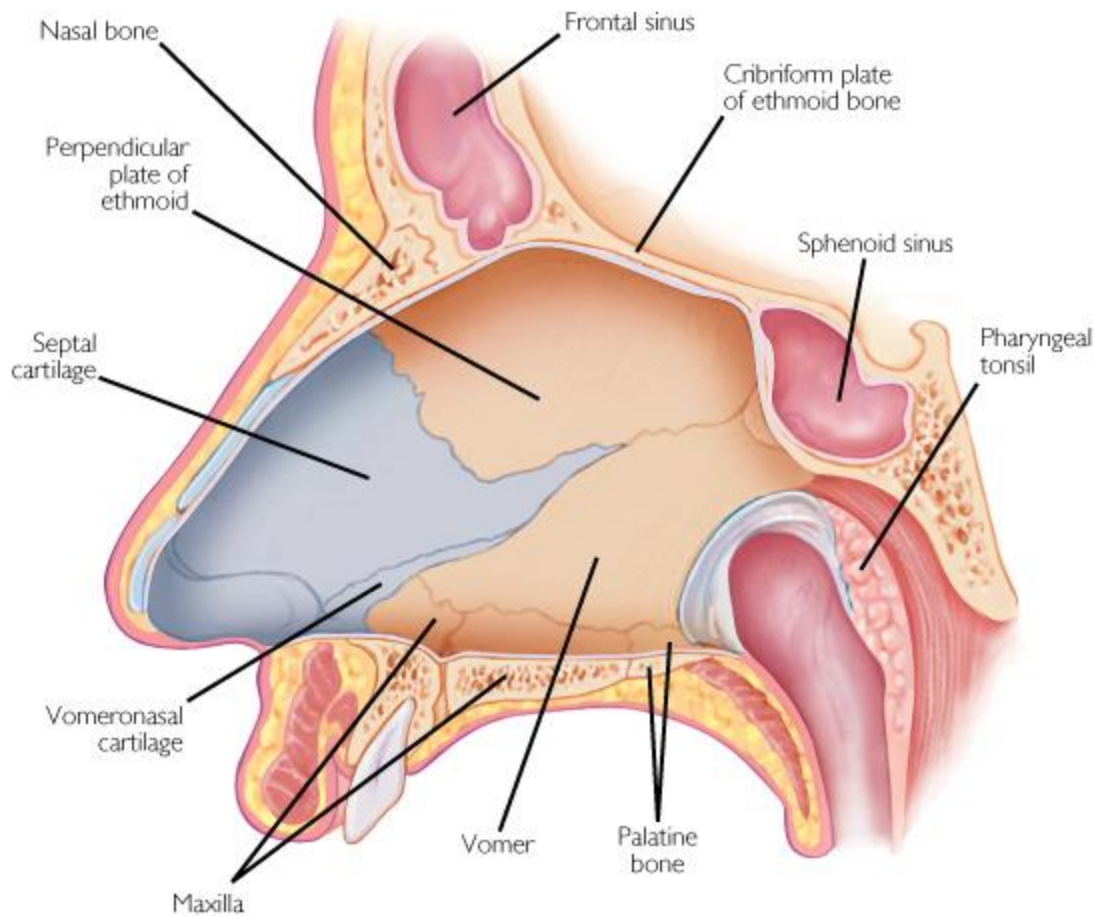
# The Roof



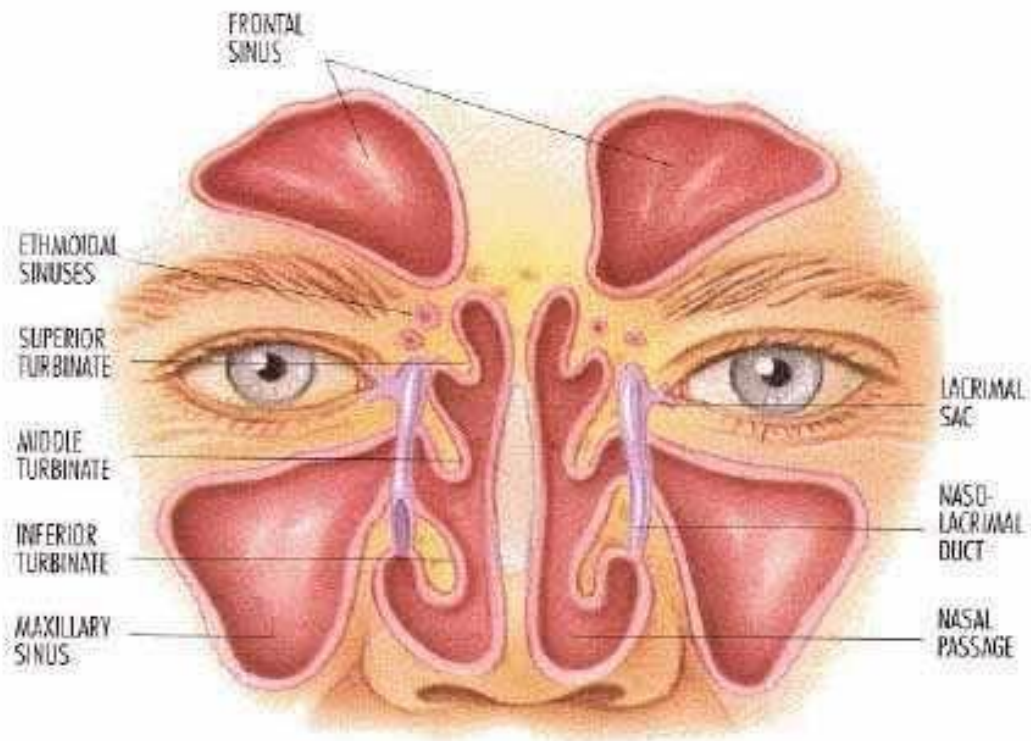
# The Floor



# The Medial Wall Nasal Septum

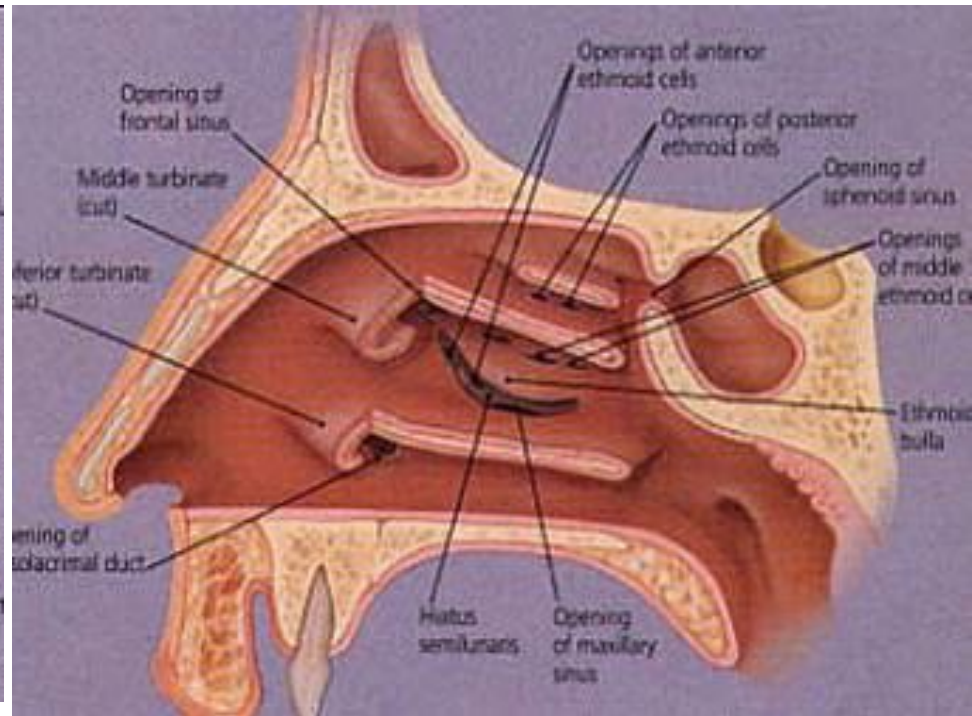
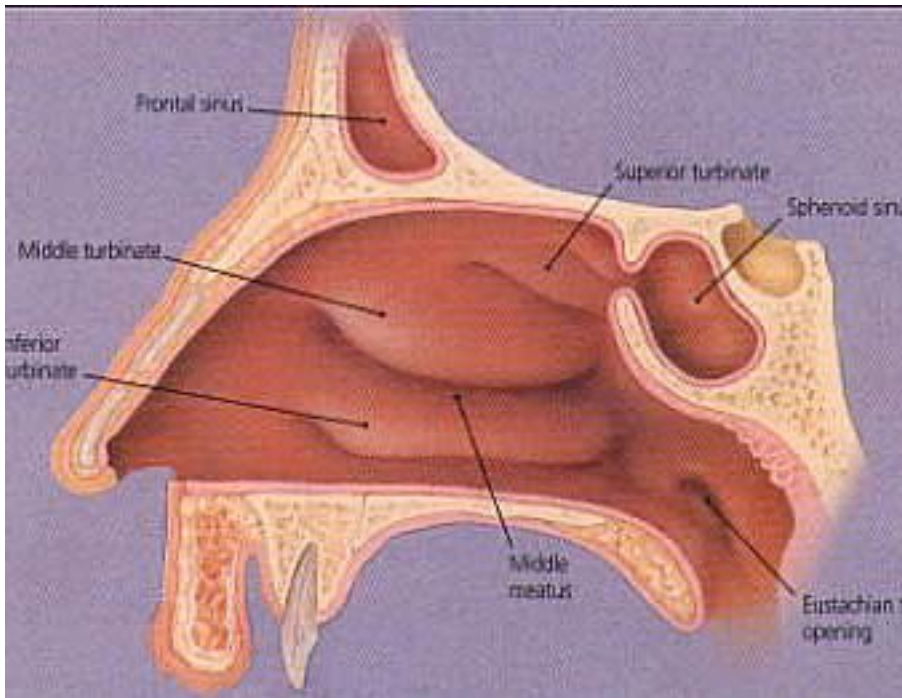


# Lateral Nasal Wall





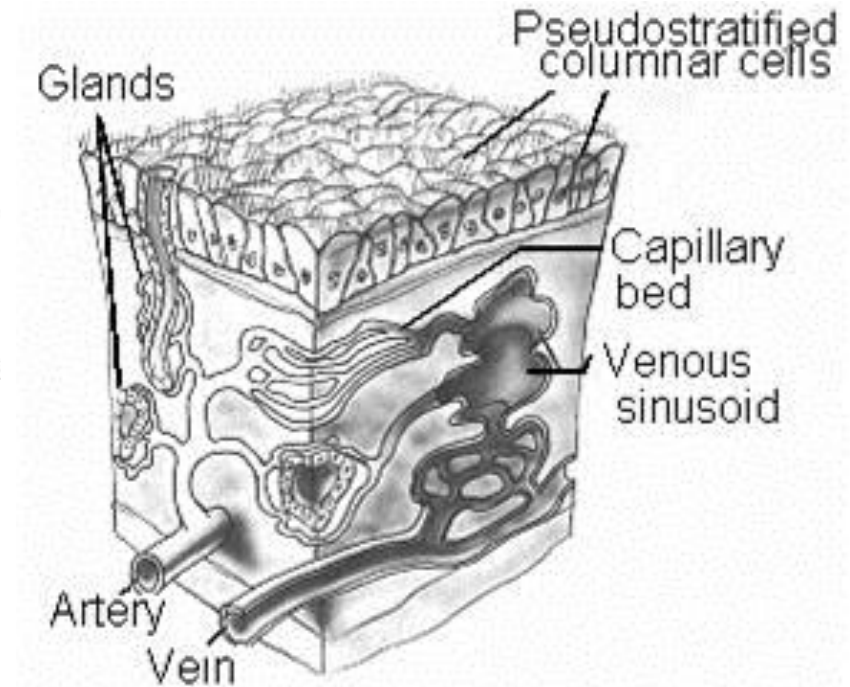
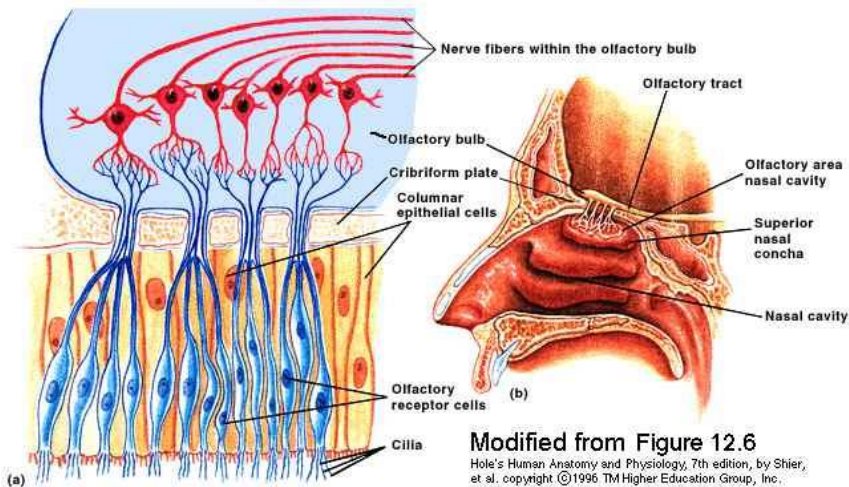
# Lateral Nasal Wall



# The Lining Mucosa

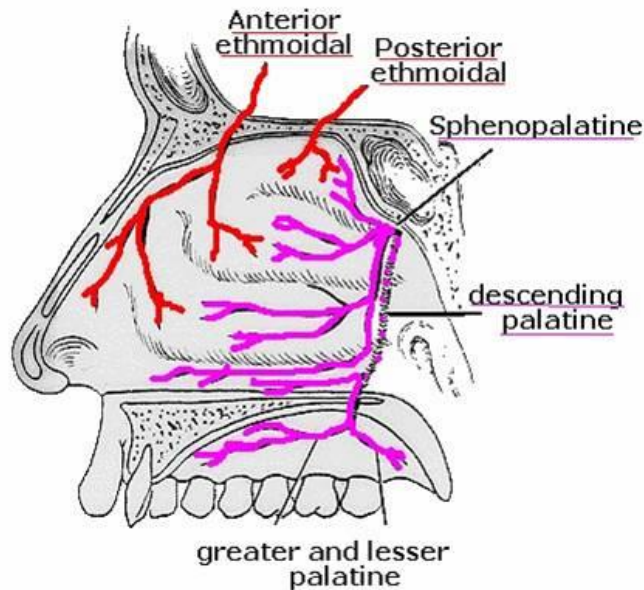
## Olfactory mucosa

## Respiratory mucosa

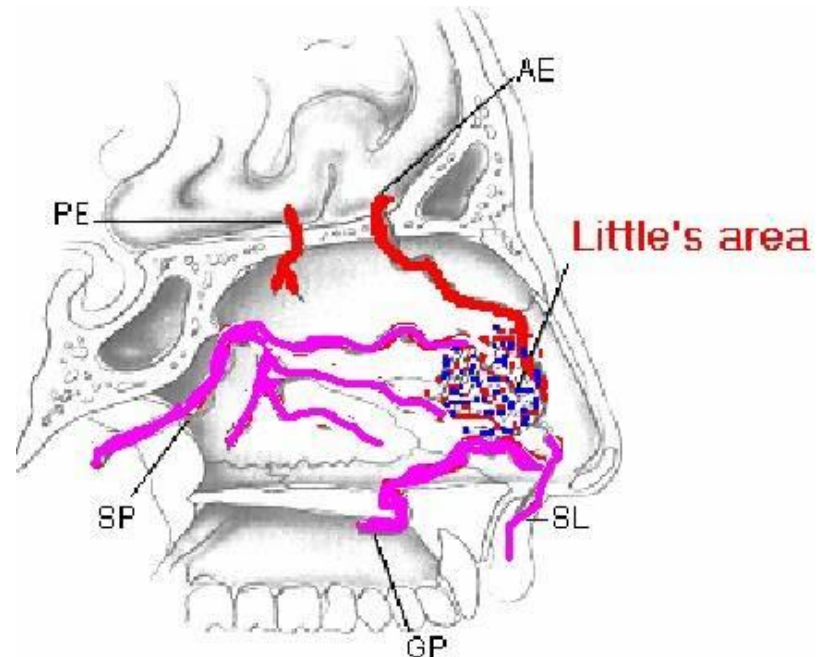


# Blood Supply

- From the external and internal carotid arteries



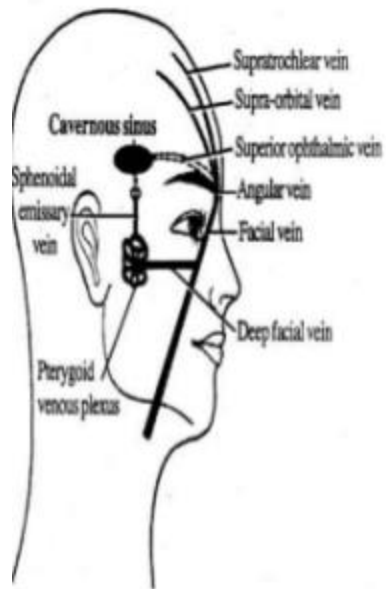
Lateral Wall



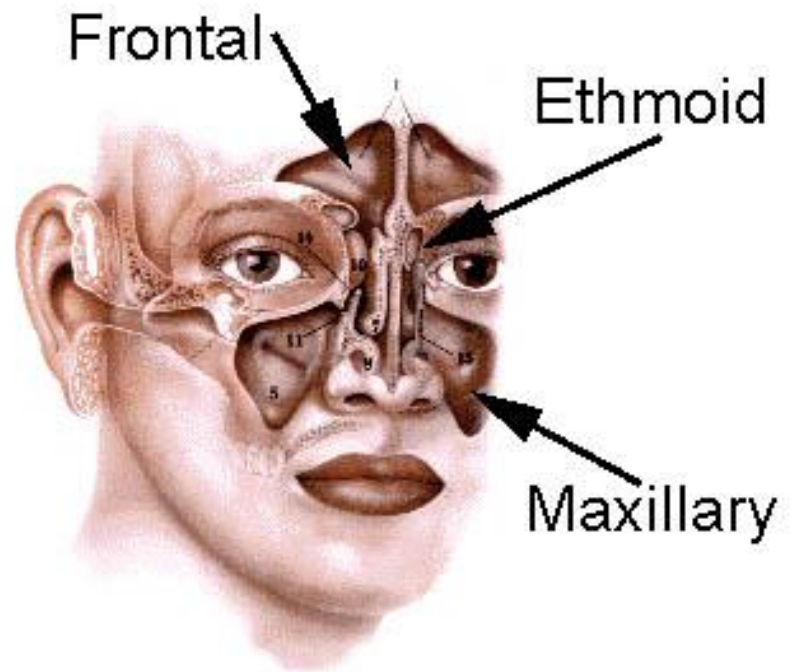
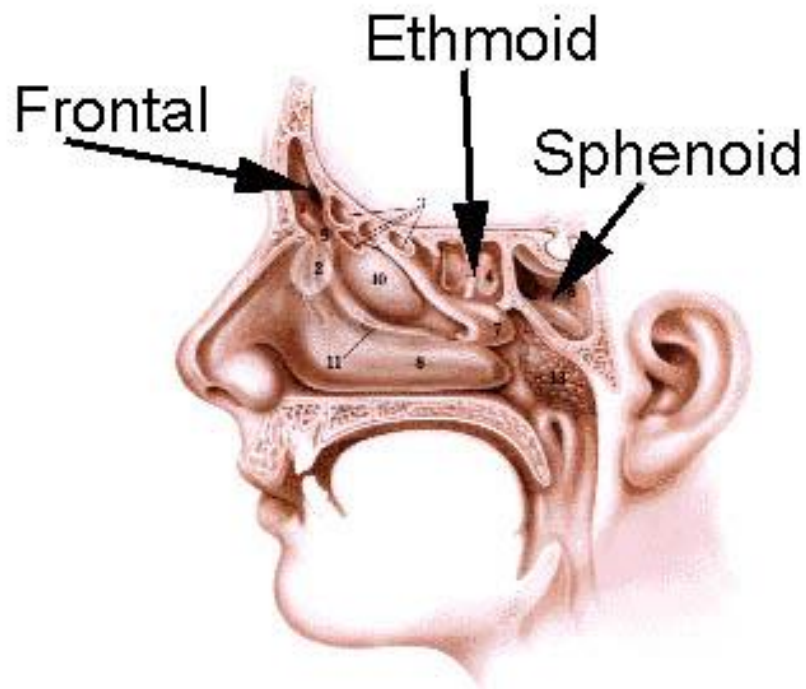
Nasal Septum

# Venous Drainage

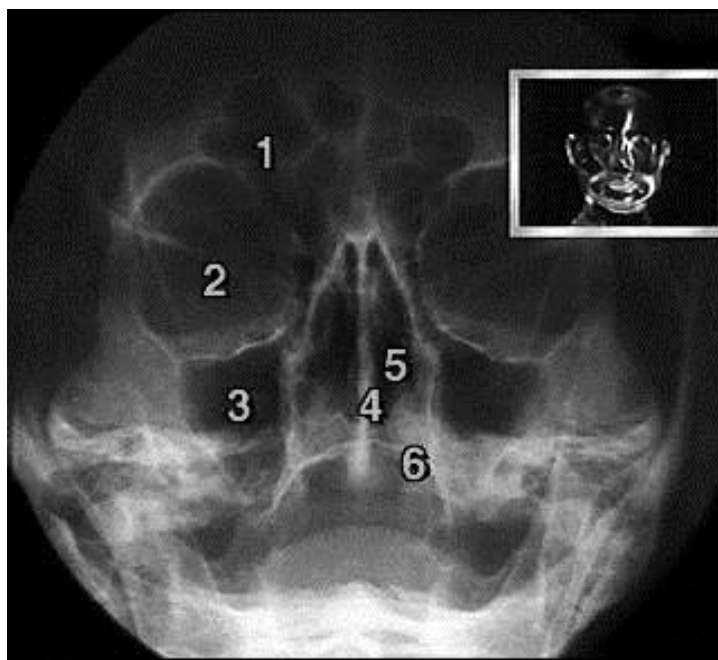
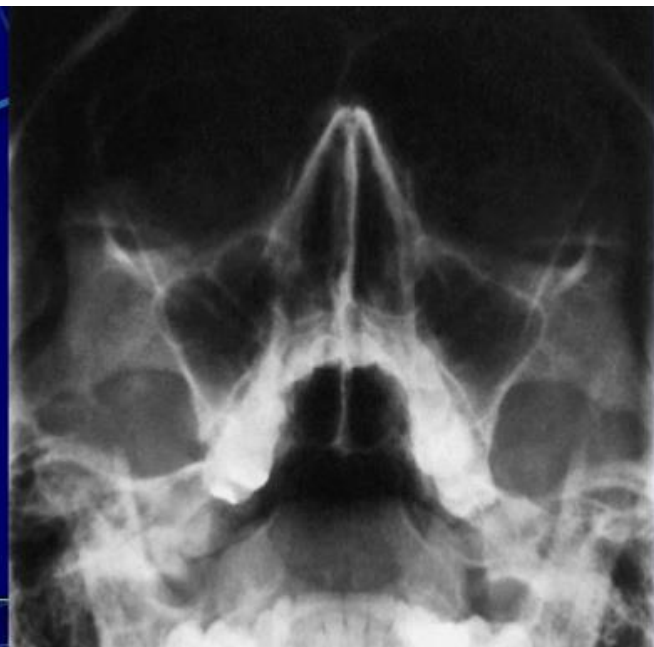
The Internal jugular and Cavernous sinus



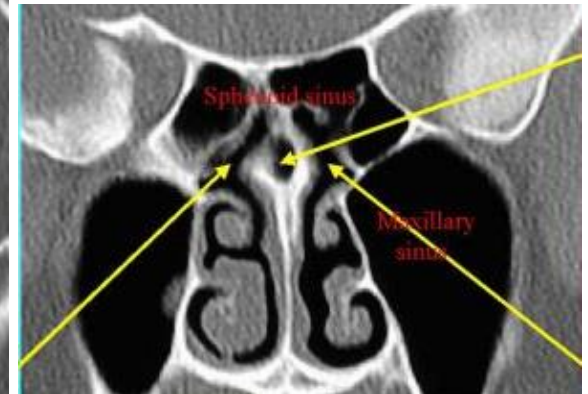
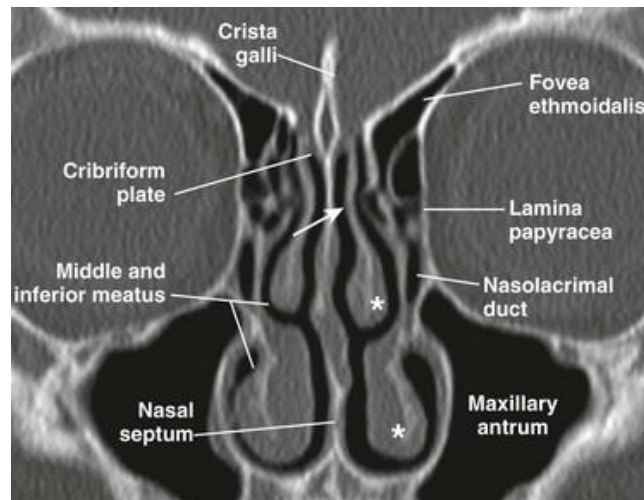
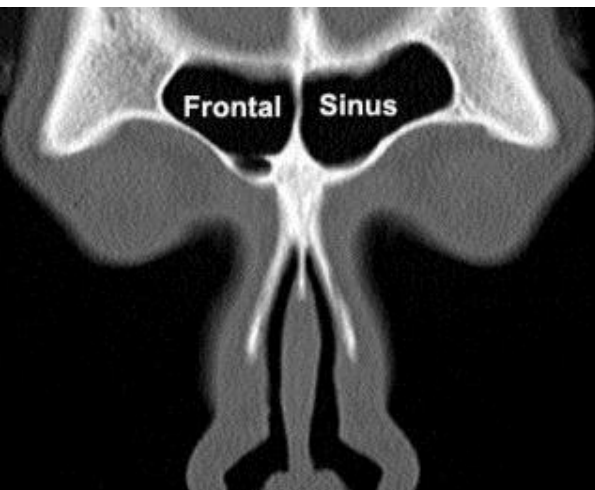
# ANATOMY OF THE PARANASAL SINUSES



# Plain Xray



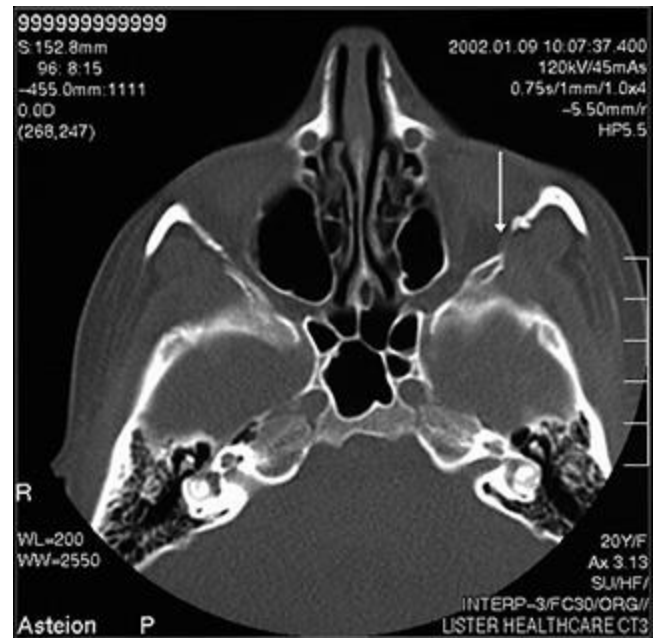
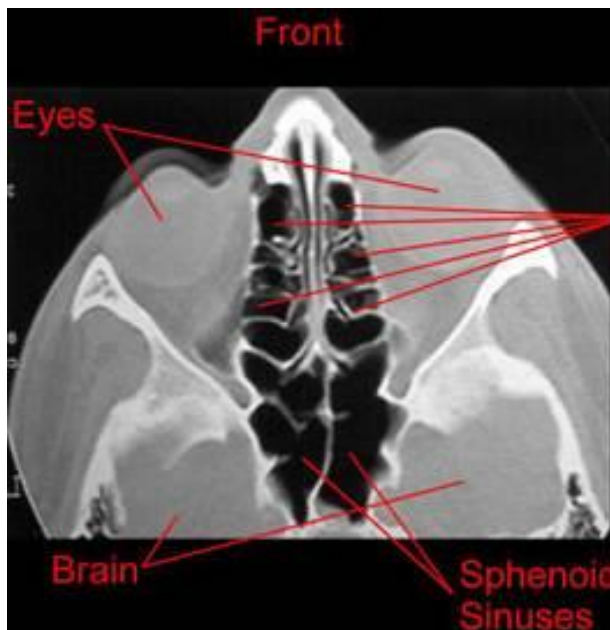
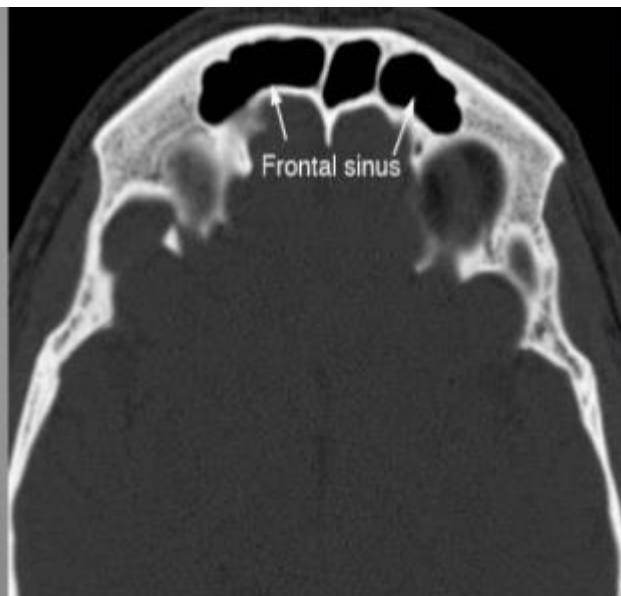
# Coronal CT



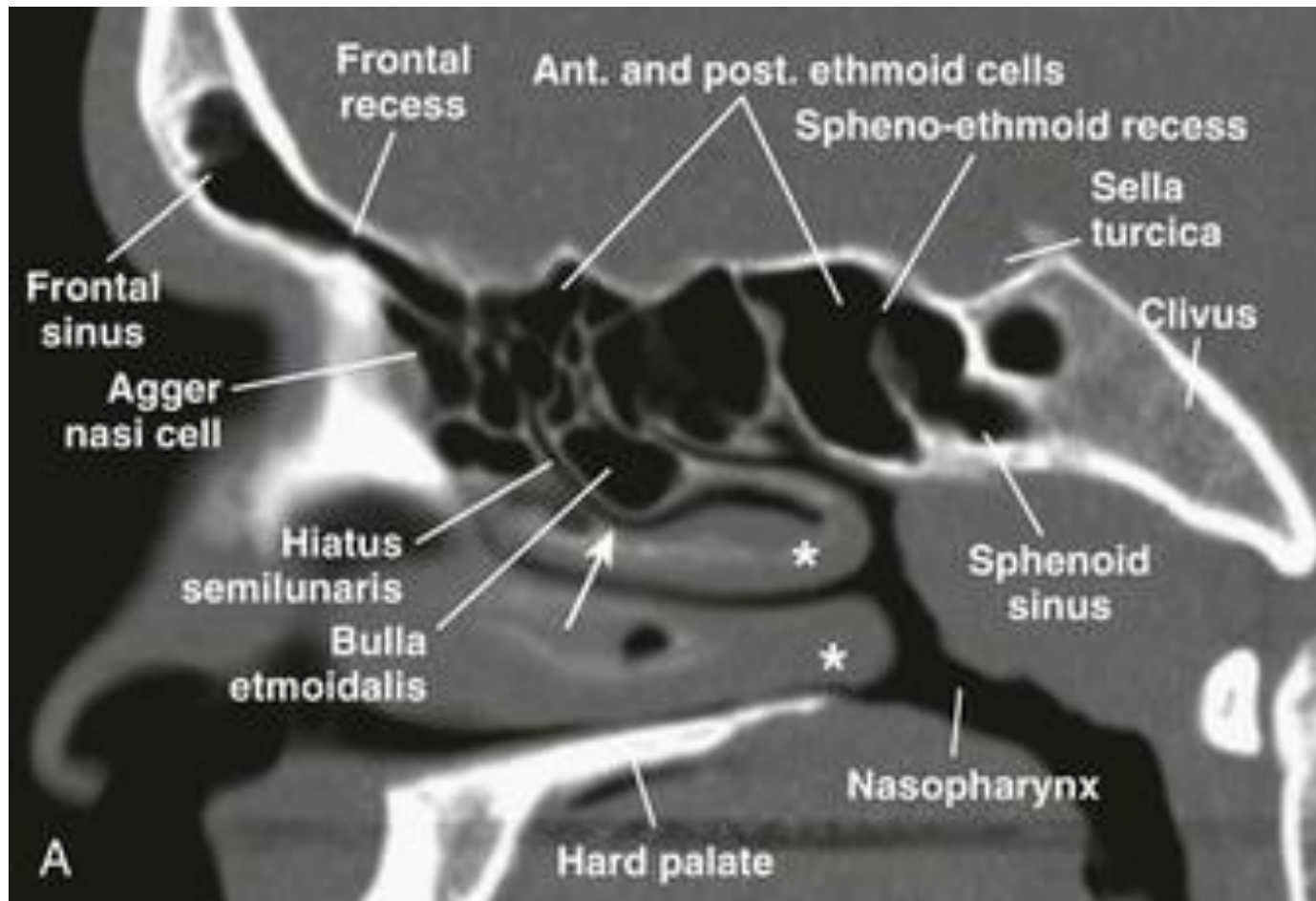
The lamina papyracea is a thin bone at the medial wall of the orbit adjacent to the **ethmoid sinus** where the intraorbital complication may pass through it



# Axial CT



# Sagittal CT



# Lining of the Sinuses

- Pseudostratified, columnar epithelium (respiratory epithelium) which is continuous with the nasal epithelium

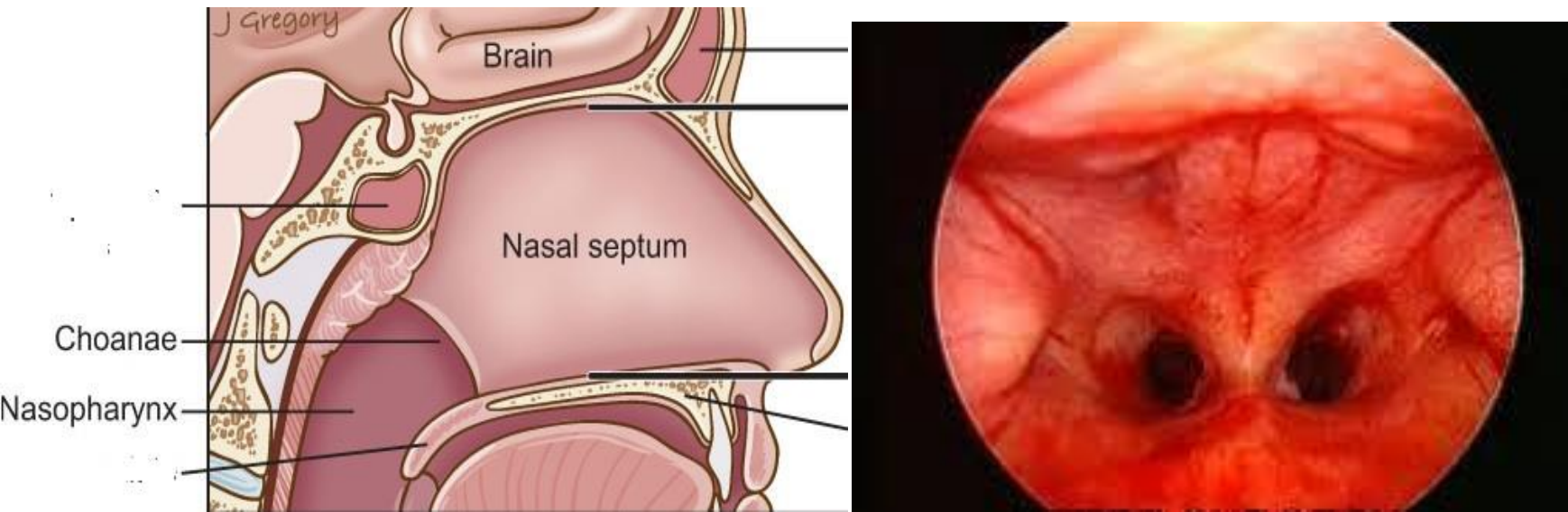
# Functions Of The Nose

- Respiratory channel
- Warming and humidifying inspired air
- Cleaning and filtering inspired air
- Olfaction

# CONGENITAL ANOMALIES

# CHOANAL ATRESIA

# The Choana



Posterior border of the nasal cavity to the nasopharynx

# Choanal Atresia

- Bony, membranous or mixed
- Unilateral or bilateral



# Bilateral Choanal Atresia

## Presentation

- At birth the neonate is obligatory nasal breather
- In bilateral choanal atresia, the baby presents by attacks of respiratory obstruction and cyclic cyanosis
- Nasal discharge

# Diagnosis

- Clinical examination:  
“mirror test”



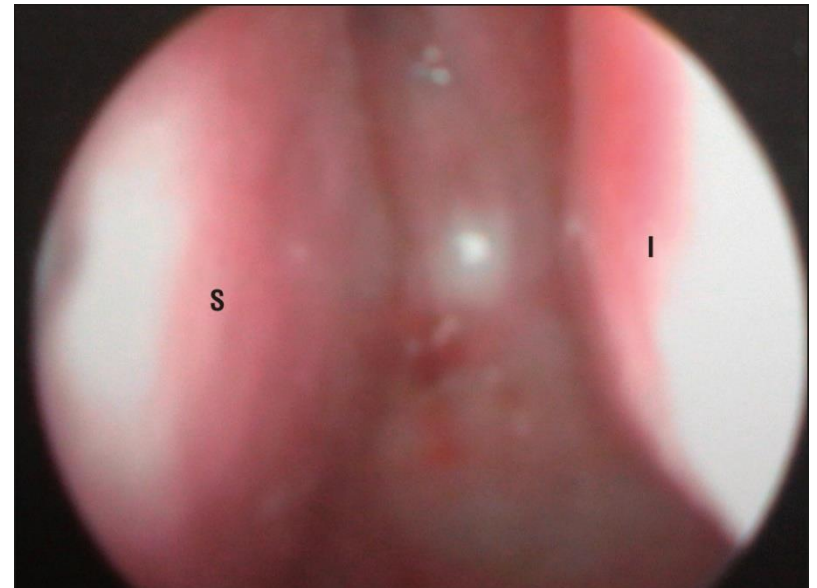
# Diagnosis

- Clinical examination:  
“mirror test”
- Inability to pass a catheter into the nasopharynx



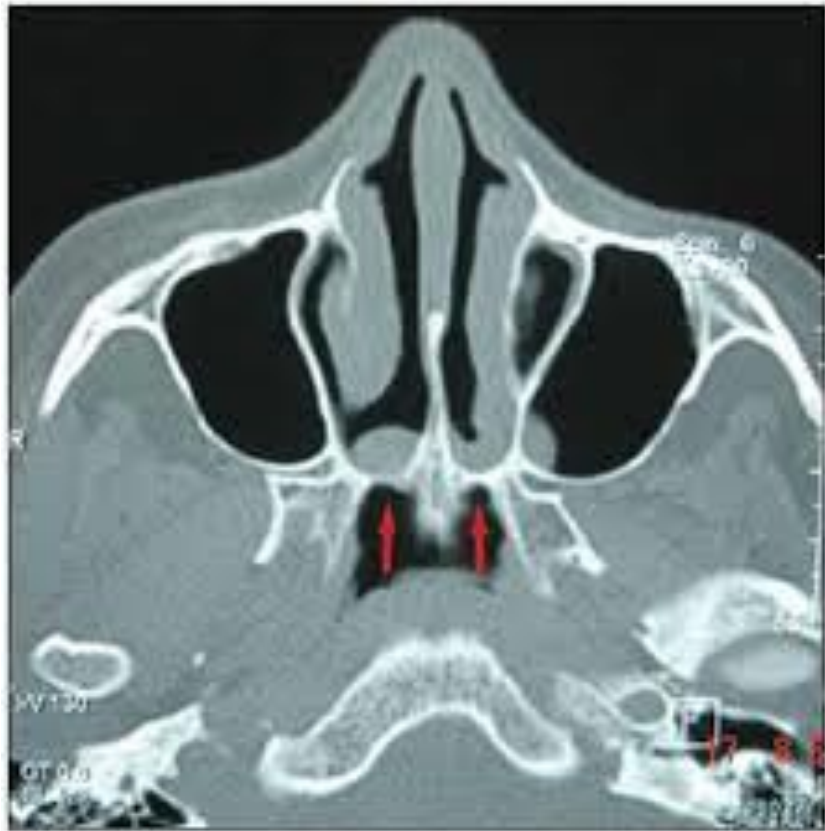
# Diagnosis

- Clinical examination:  
“mirror test”
- Inability to pass a catheter into the nasopharynx
- Endoscopy



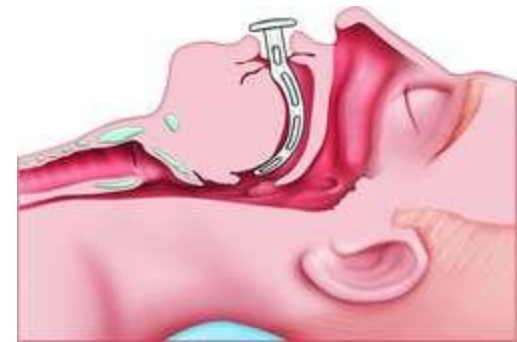
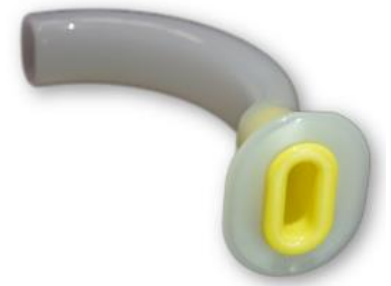
# Diagnosis

- Clinical examination:  
“mirror test”
- Inability to pass a catheter into the nasopharynx
- Endoscopy
- Radiographs

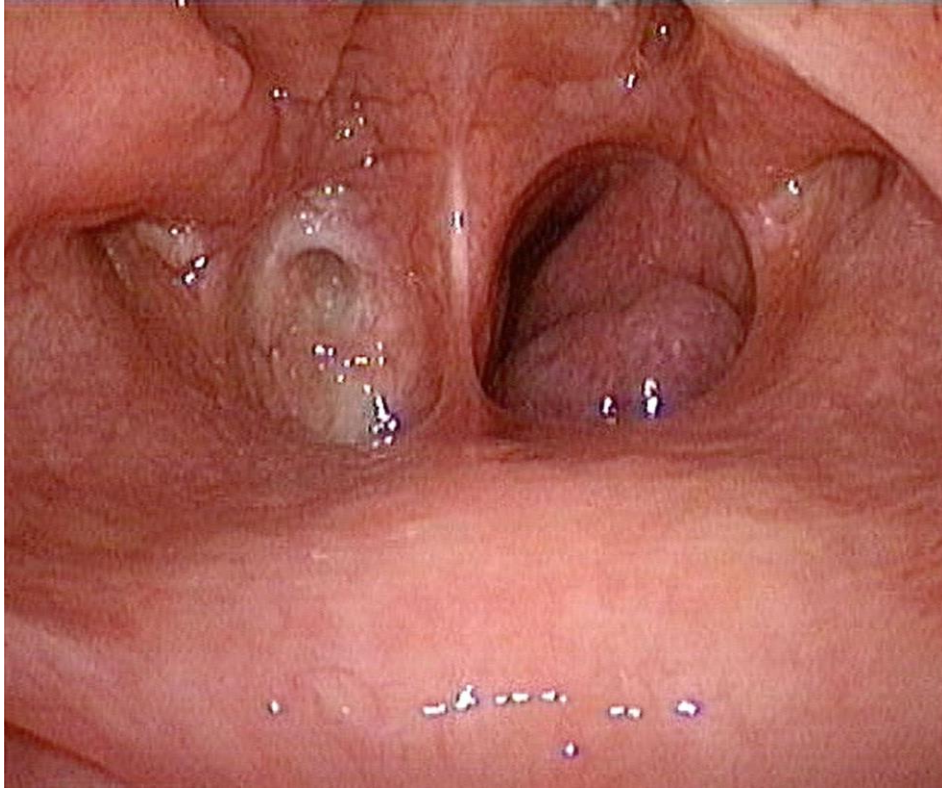


# Management

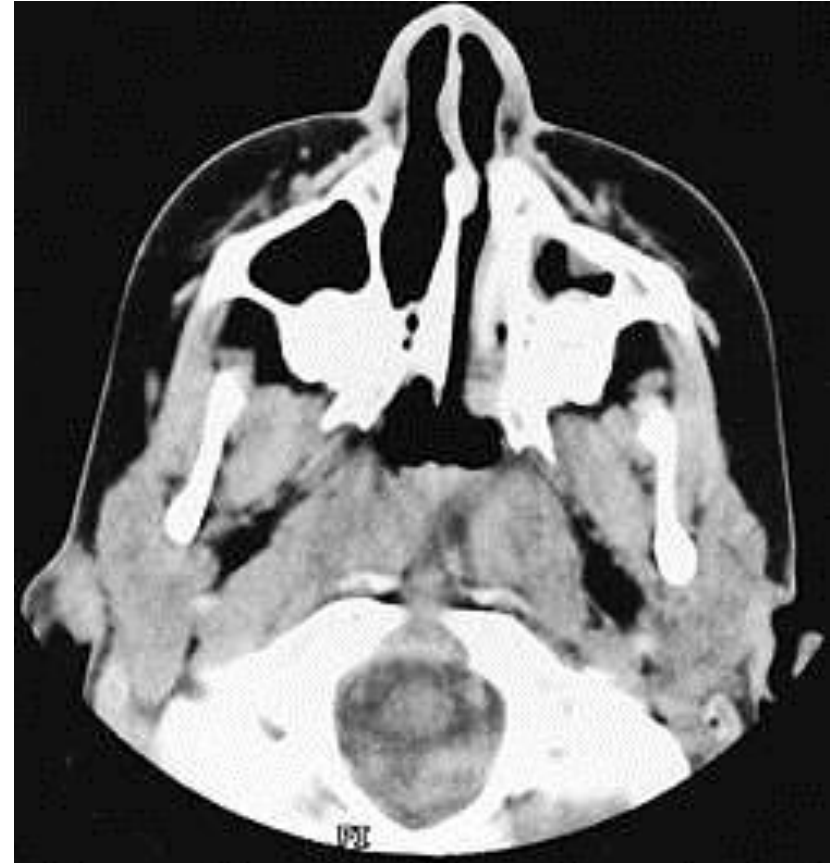
- Emergency
  - Immediate oral airway
- Definitive surgery
  - Done mostly endoscopically



# Unilateral Choanal Atresia



Right sided choanal atresia





# Unilateral Choanal Atresia

- Usually diagnosed late in life
- Presents by unilateral nasal obstruction and unilateral mucoid nasal discharge since birth
- Treatment is by elective surgical repair

# Diseases of the Nasal Vestibule

# Acute Infections

- Acute vestibulitis
- Furunculosis

# Acute Vestibulitis

- Inflammation of the skin of the vestibule,  
usually due to *Staphylococcus aureus*

# Causes

- Habitual rubbing of the nose
- Allergy
- Rhinorrhea



# Clinical Features

- Pain
- Irritation
- Redness and swelling
- Crusting



# Treatment

- Local antibiotics and steroids

# Furunculosis

- Acute infection of the hair follicles with *Staphylococcus aureus*





# Complications

- Local abscess
- Spreading cellulitis
- Cavernous sinus thrombophlebitis



# Treatment

- Avoid squeezing
- Local application of heat
- Antibiotics

# DEVIATED NASAL SEPTUM

# Etiology

- Trauma
- Maldevelopment

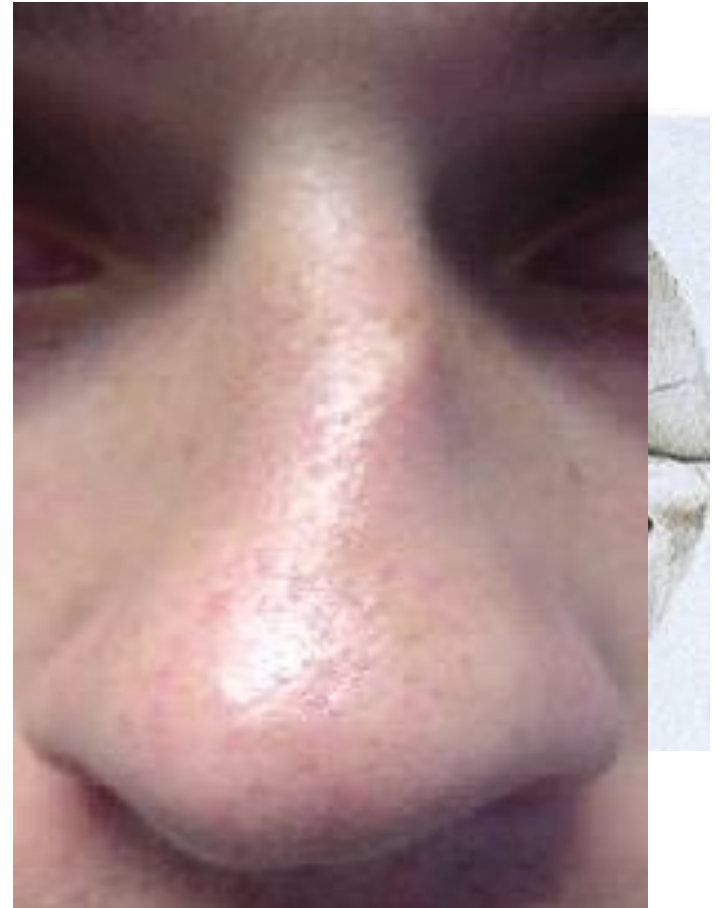
# Symptoms

- Nasal obstruction

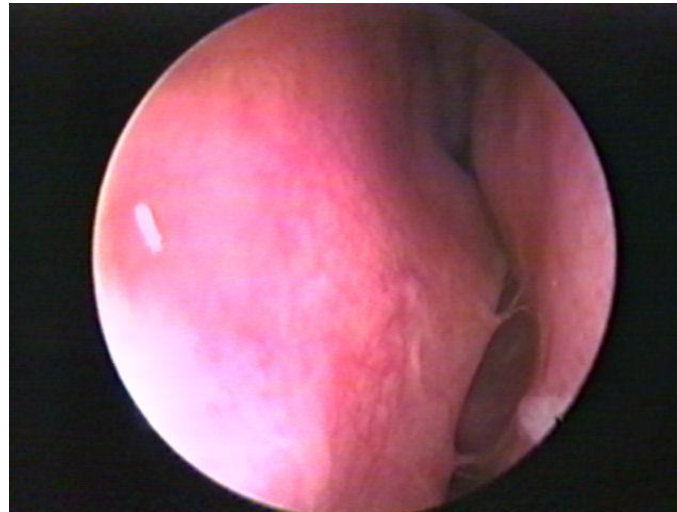


# Symptoms

- Nasal obstruction is the most common symptoms
- Might associated with External deformity

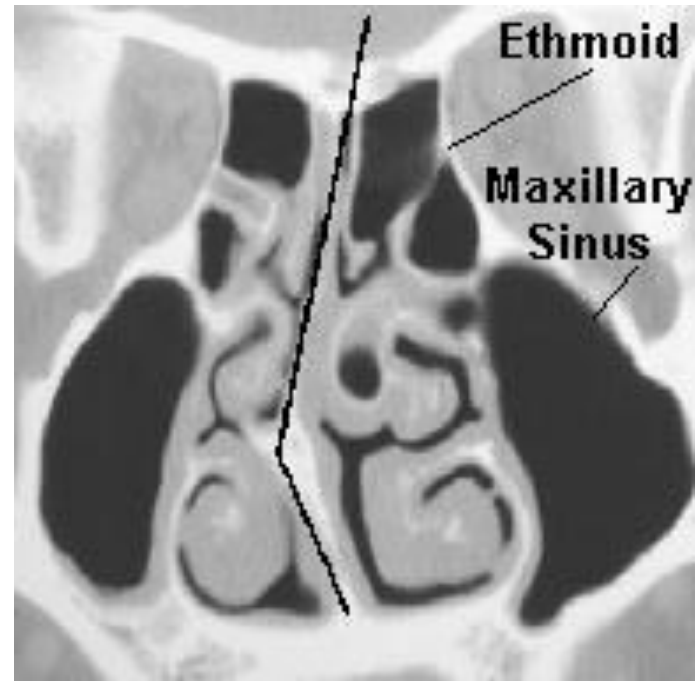


# Examination



# Radiology

- Not necessary in most cases





# Treatment

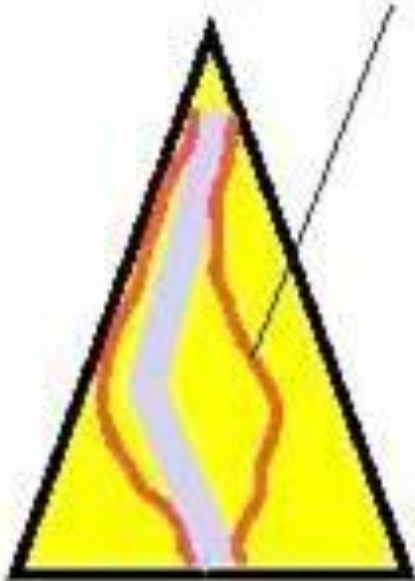
- No treatment , if asymptomatic
- Septoplasty to correct the deviated nasal septum but it will not change the external nasal shape unless associated with rhinoplasty

# Septoplasty

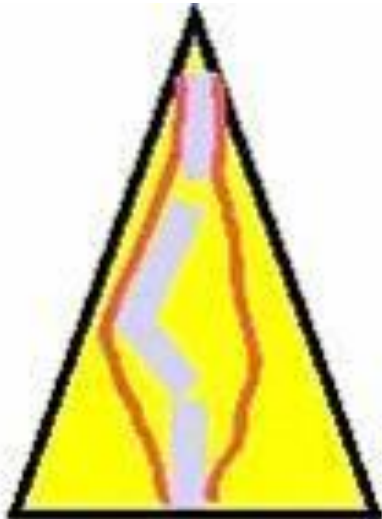
Cartilage



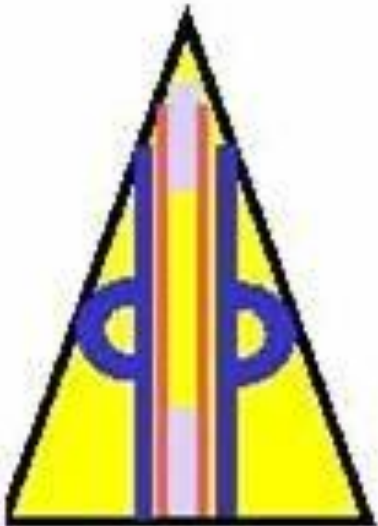
**Septal Deviation**



**Mucosal lining and perichondrium are separated from cartilage**



**Deviated portion of cartilage removed**



**Lining replaced & splints (blue) inserted**

# HEMATOMA OF THE SEPTUM

# Etiology

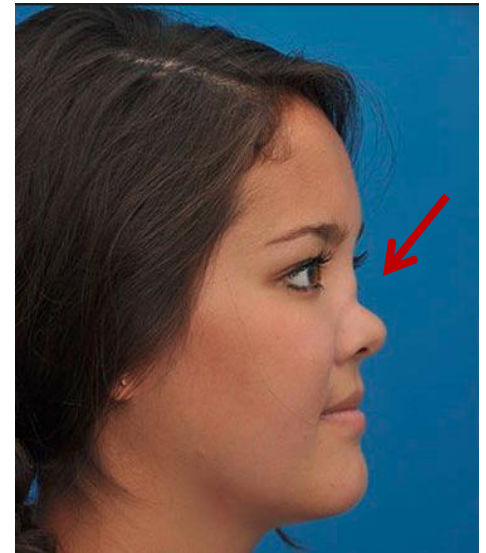
- Direct trauma
- Operative trauma
- Blood dyscrasias

# Clinical Features



# Complications

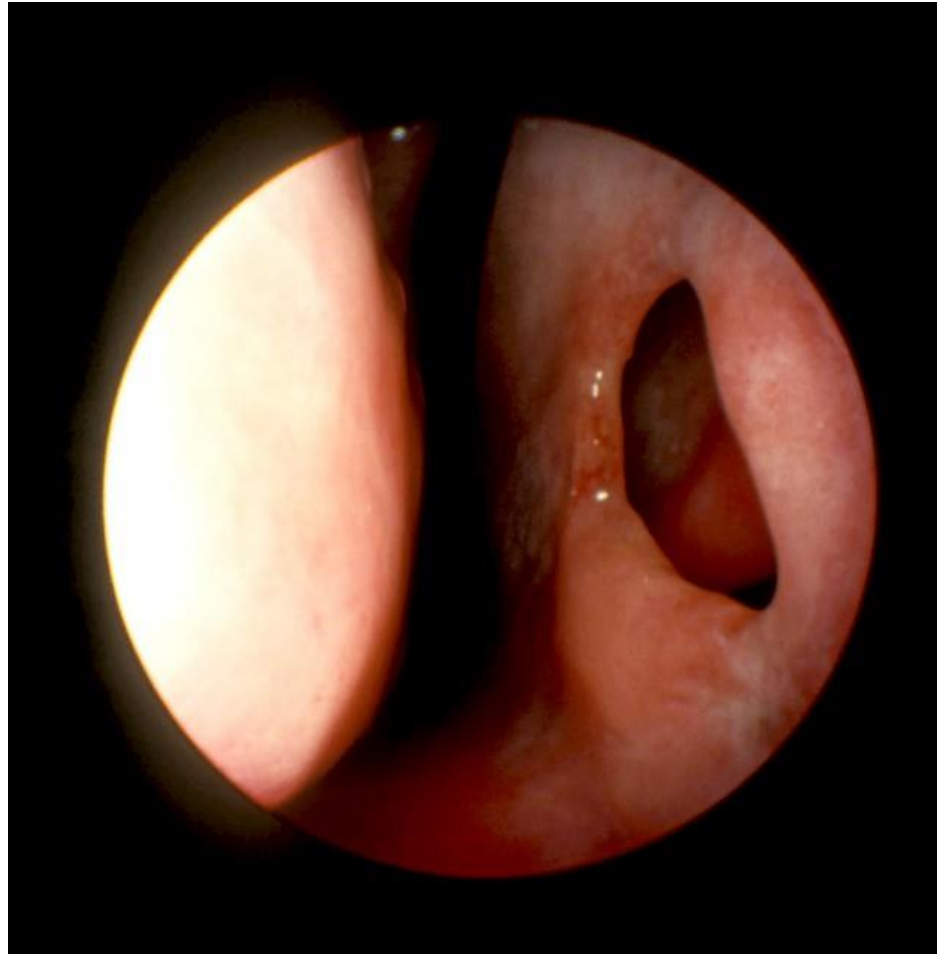
- Cartilage necrosis cause saddle nasal deformity
- Septal abscess
- Septal perforation



# Treatment

- Incision and drainage
- Systemic antibiotics

# PERFORATION OF SEPTUM





# Etiology

- Septal surgery
- Other trauma
- Cocaine
- Syphilis, TB, Lupus, etc.
- Tumors

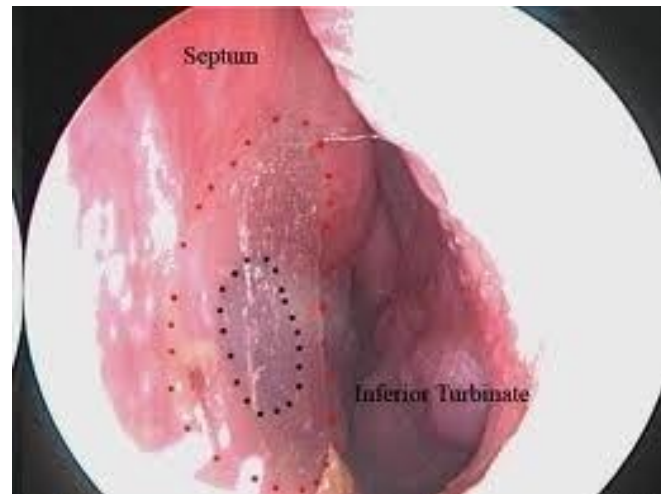
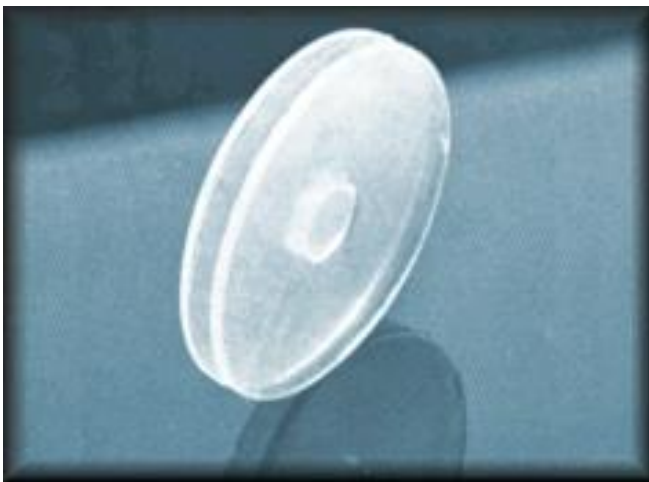
# Clinical features

- Asymptomatic
- Crusting
- Epistaxis
- Whistling



# Treatment

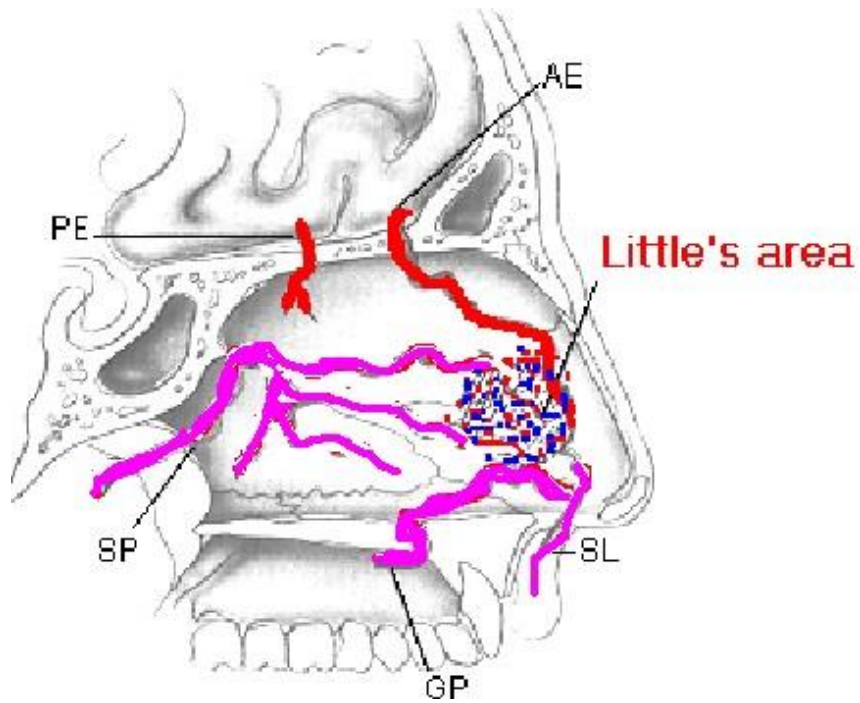
- No treatment
- Nasal wash
- Surgical repair
- Insertion of silicon “button”



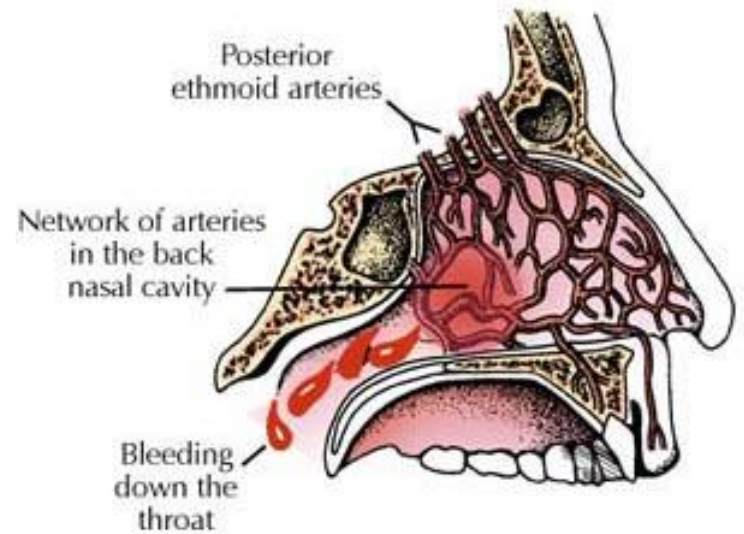
**EPISTAXIS**

# SITES

## Anterior



## Posterior



# LOCAL CAUSES

- Acute trauma
- Chronic trauma
- Inflammation of the nose and sinuses
- Tumors
- Idiopathic



# SYSTEMIC CAUSES

- Coagulation and bleeding diseases
- Atherosclerosis
- Familial hemorrhagic telangiectasia



# MANAGEMENT

- General measures
- Stop the bleeding
- Prevent further bleeding

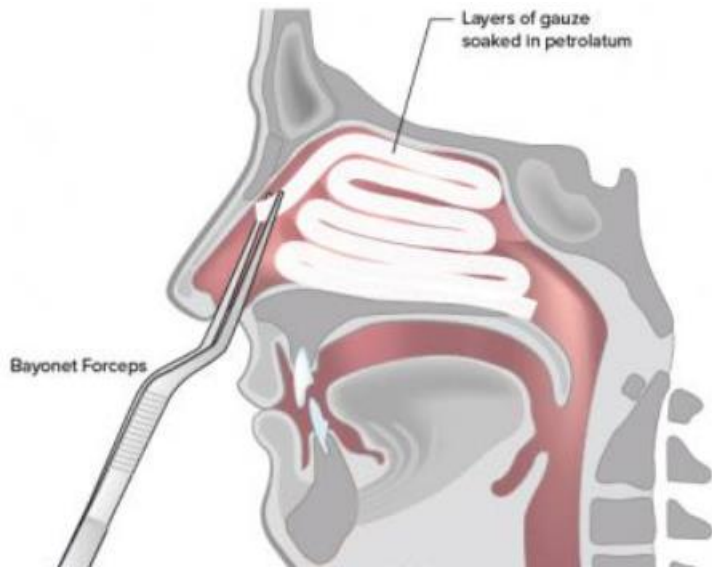


# CONTROL THE BLEEDING

- Digital pressure
- Ice application
- Cautery
  - Chemical
  - Electric
- Anterior nasal pack



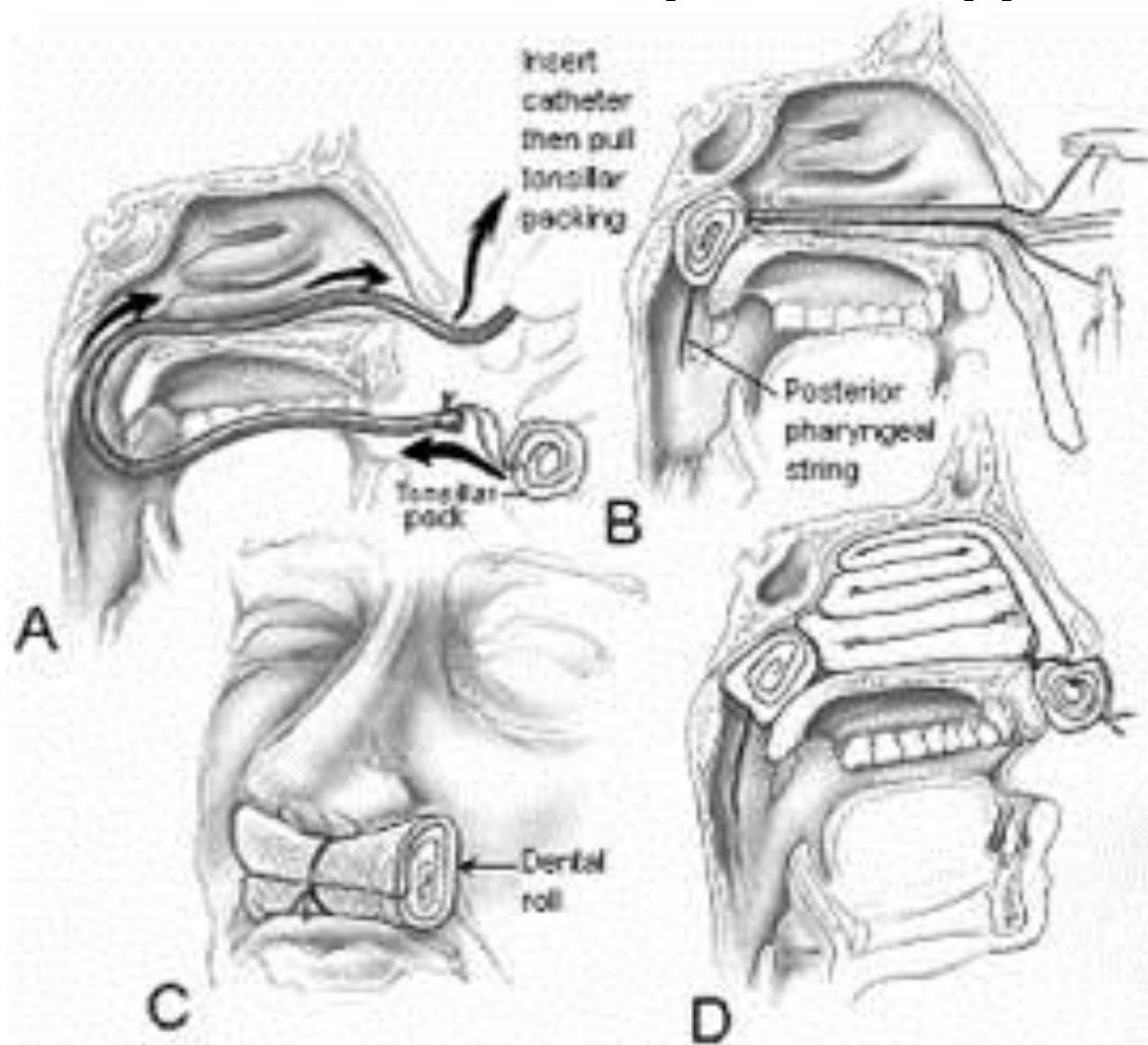
# Anterior nasal packs



# CONTROL THE BLEEDING

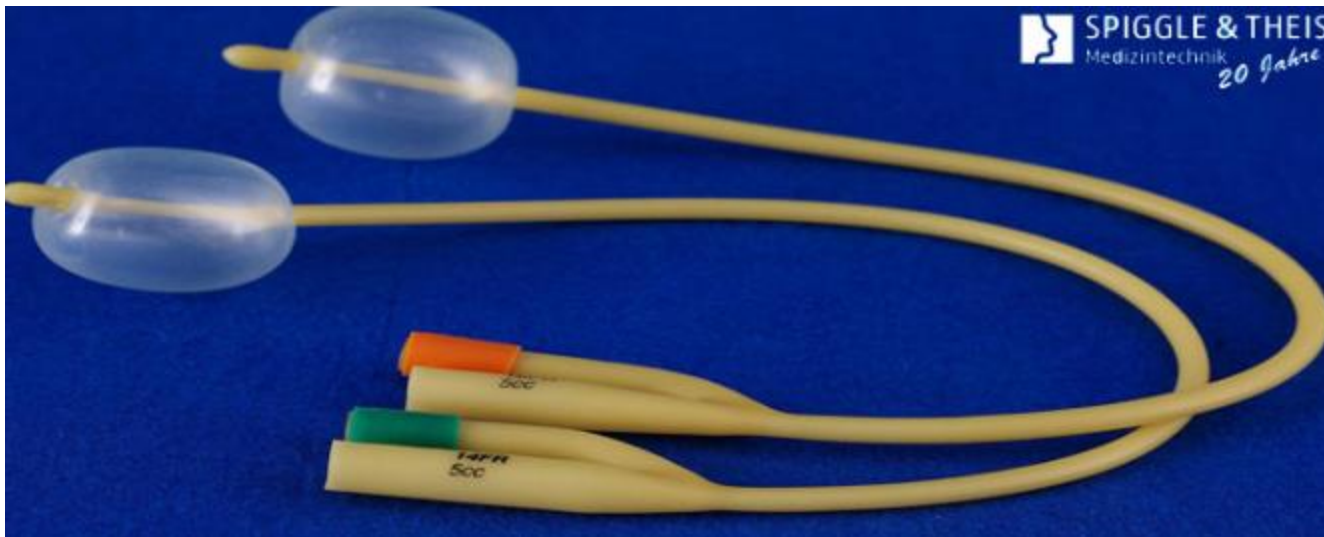
- Digital pressure
- Caутery
  - Chemical
  - Electric
- Anterior nasal pack
- Posterior nasal pack

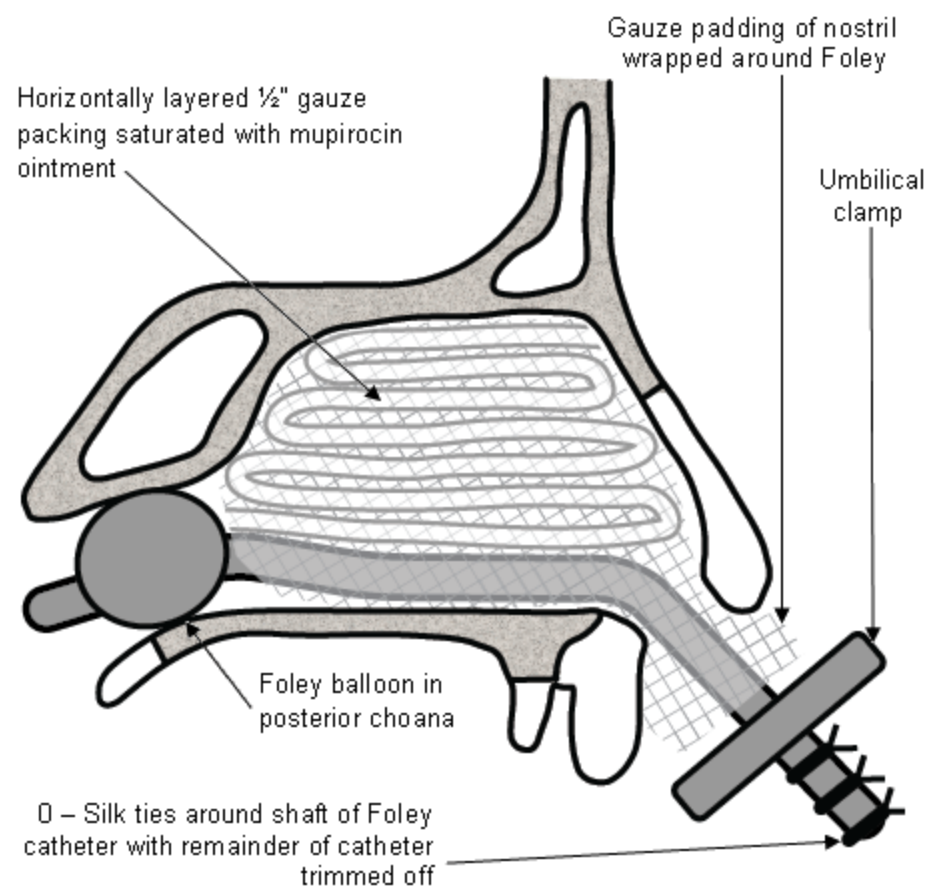
# Postnasal packing



# Postnasal packing

- Foley Catheter or balloon catheter





# Double balloon nasal catheter



# CONTROL THE BLEEDING

- Digital pressure
- Caутery
- Anterior nasal packing
- Postnasal pack
- Arterial ligation
  - Maxillary, Ethmoids, External carotid
- Arterial embolization



# Prevention of recurrence

- Treatment of the cause
- Cautery

THANK YOU