

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

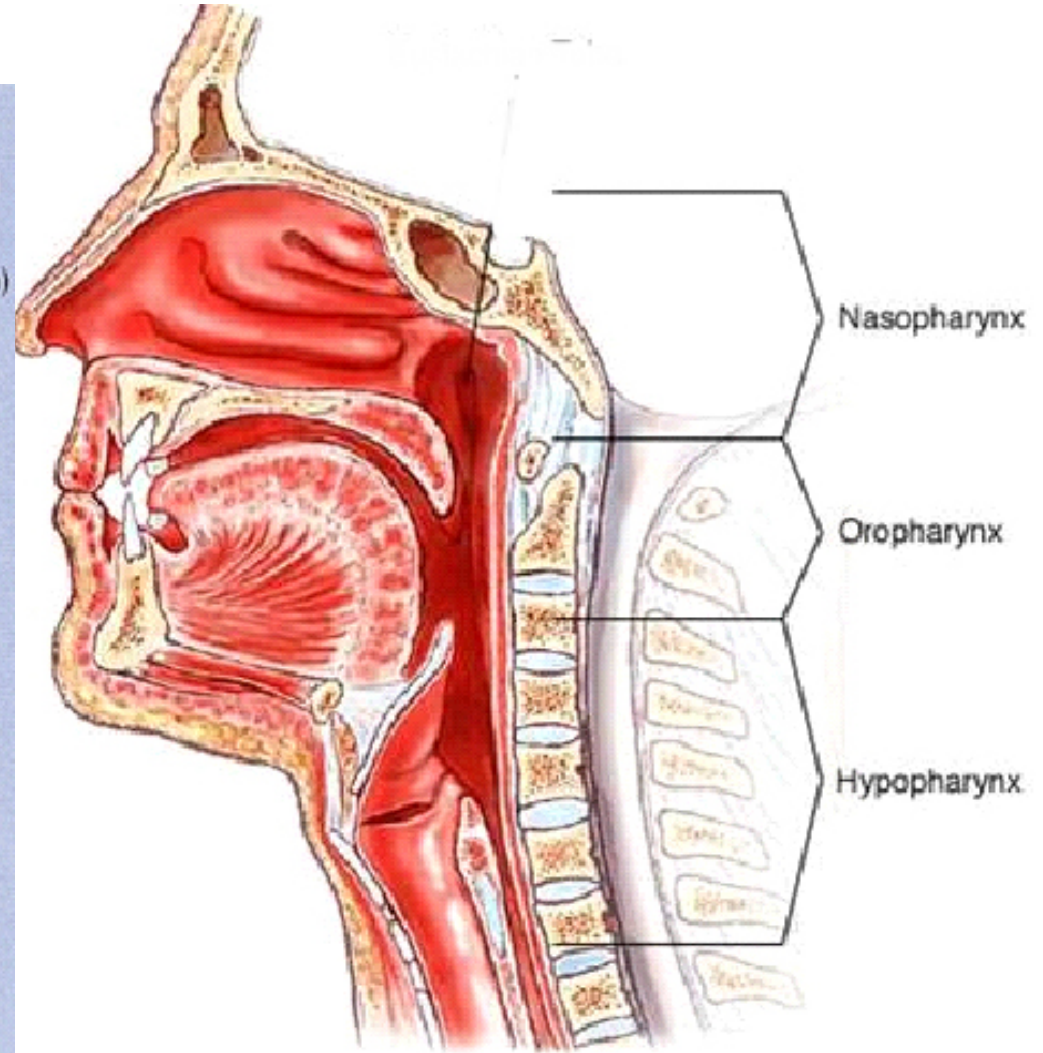
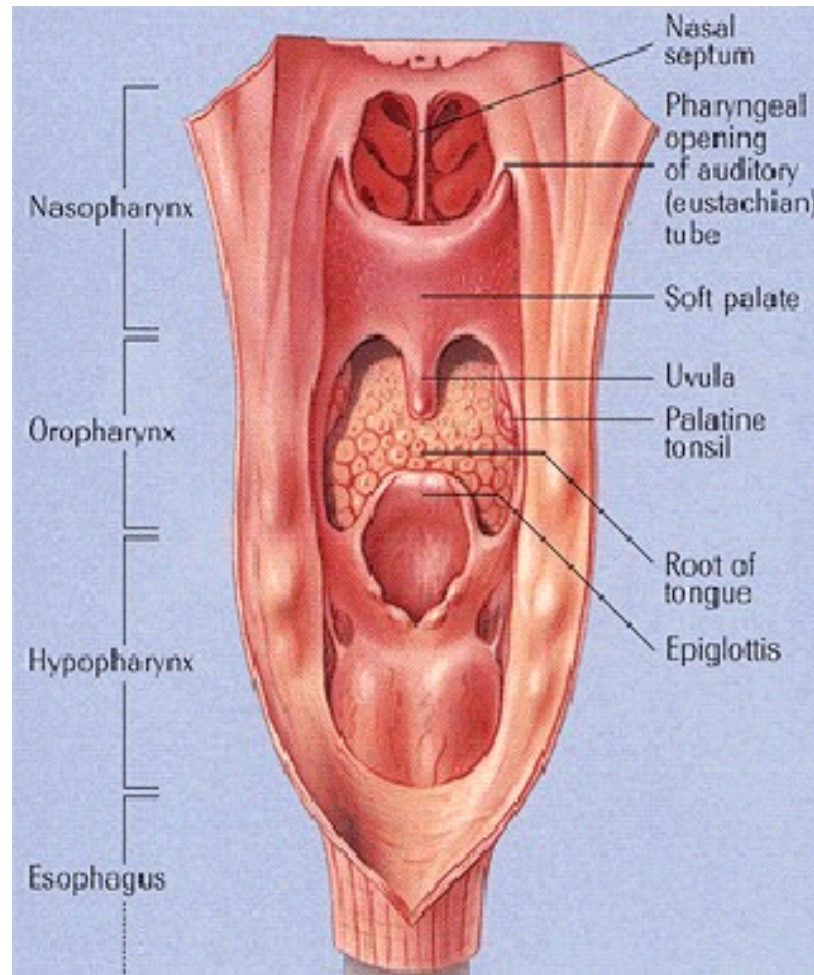
# THE PHARYNX

Dr. Ahmad Al Roqi

# *Anatomy*

- Skull base
  - Cricoid cartilage anteriorly
  - Inferior border of C6 posteriorly
- Widest portion (5cm) at hyoid
- Narrowest portion (1.5cm) at caudal end
- Divided into 3 parts:
  - Nasopharynx
  - Oropharynx
  - Hypopharynx

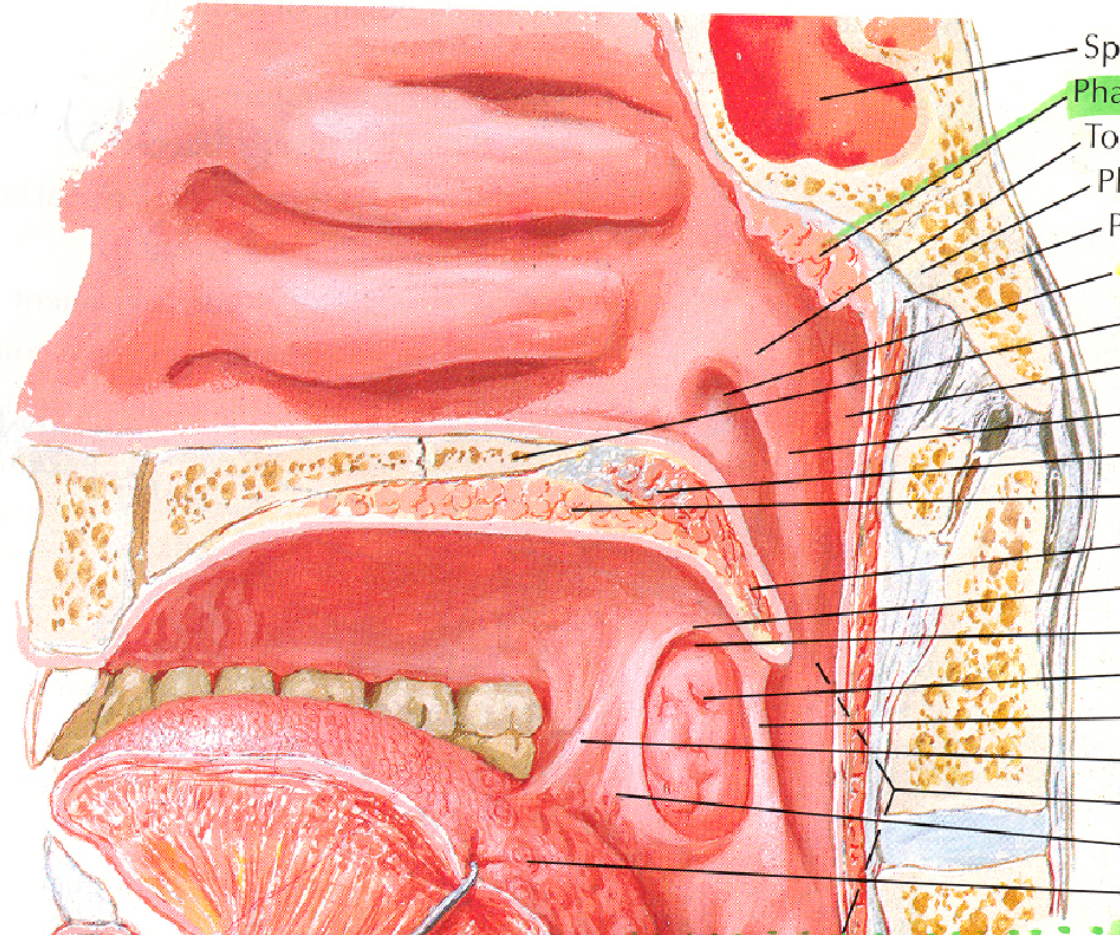
# Cavity of the pharynx

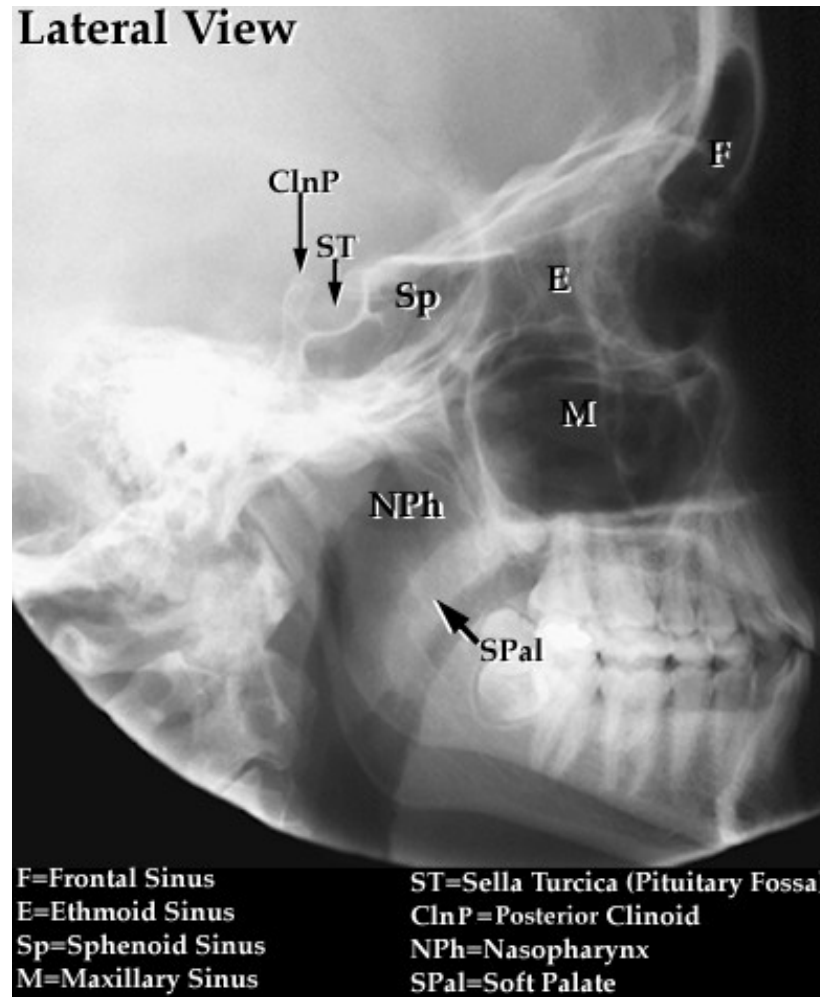


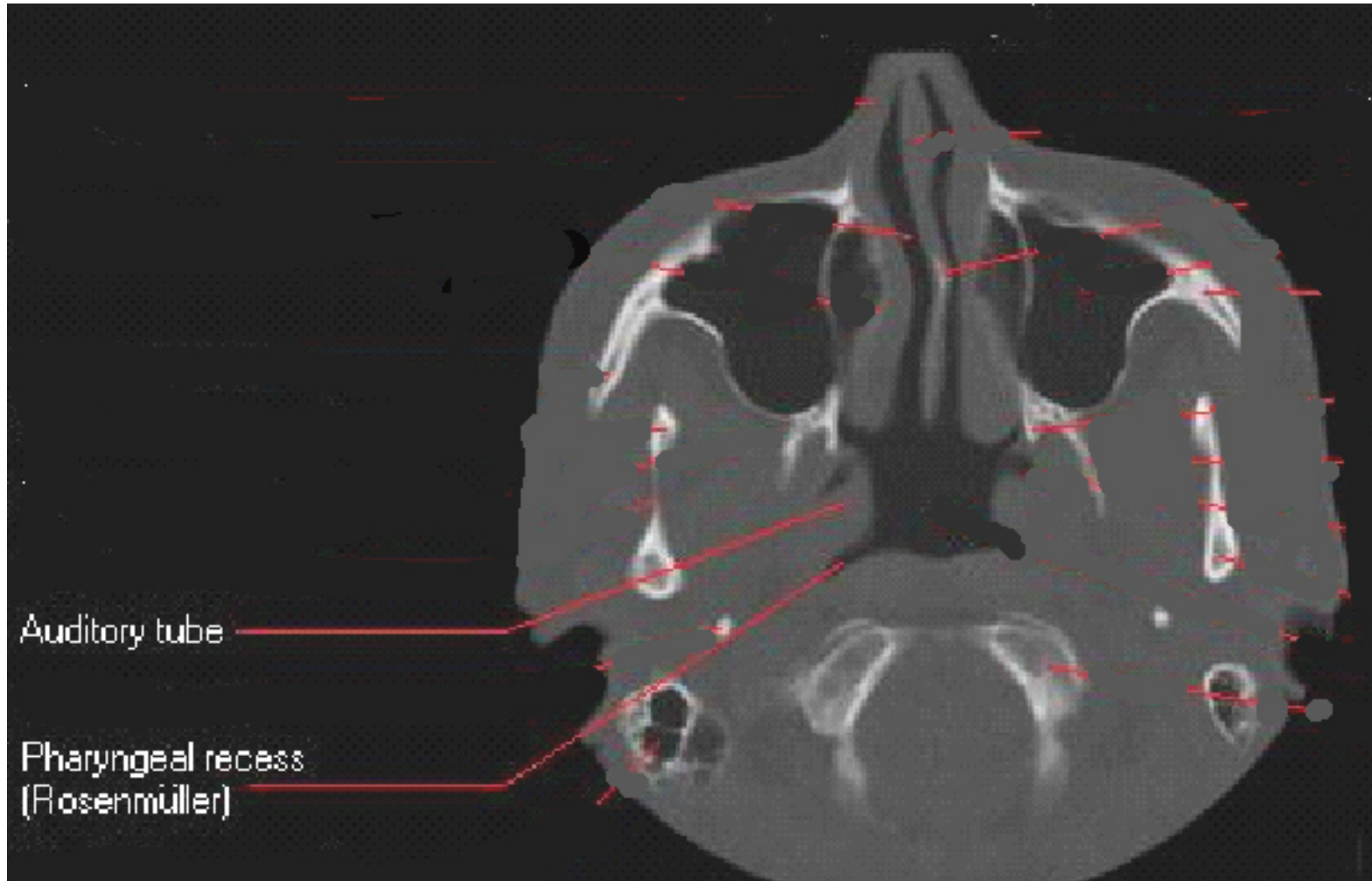
# *Nasopharynx*

- Respiratory function
- Anterior: choana (posterior nasal aperture)
- Posterior: superior constrictor muscle
- Superior: basilar portion of occipital bone
- Inferior: soft palate

# The Nasopharynx





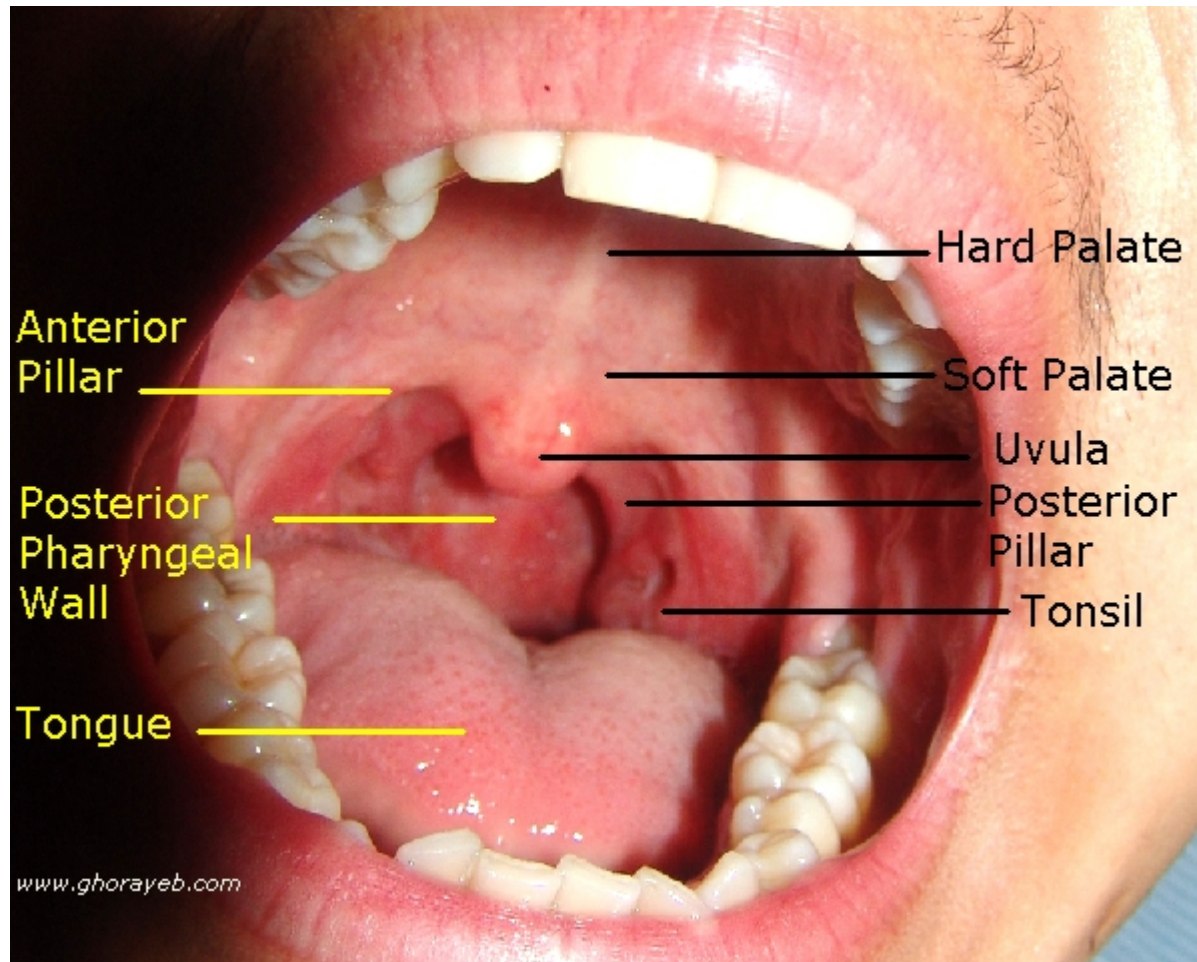




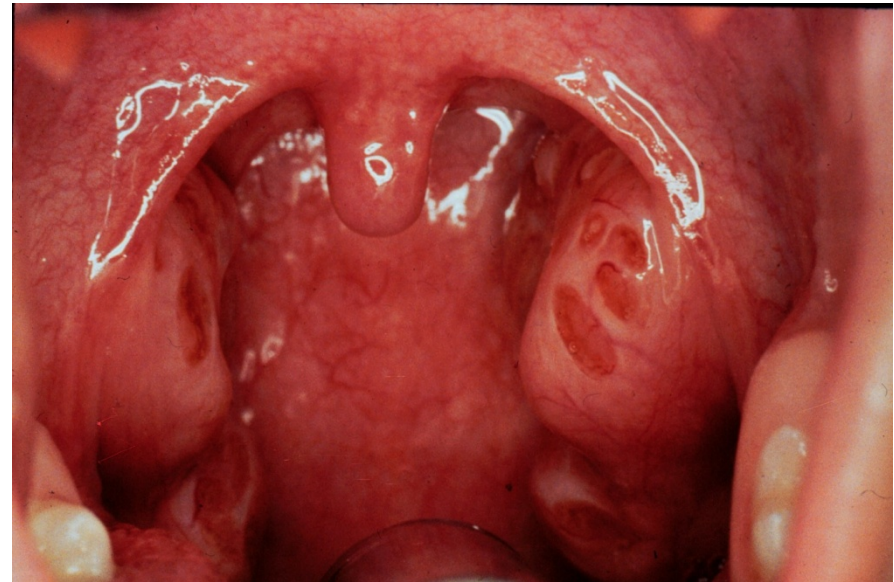
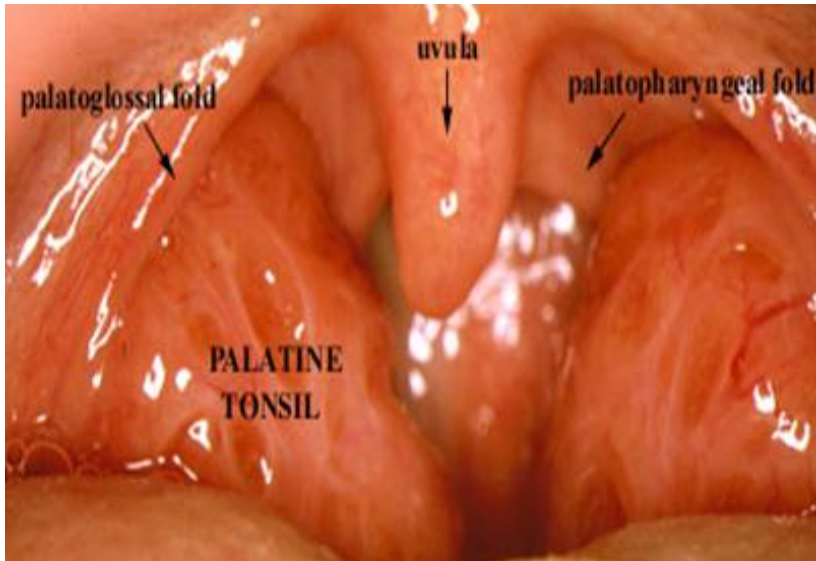
# *Oropharynx*

- Respiratory & Digestive function
- Anterior: anterior tonsillar pillar
- Posterior: superior & middle constrictors
- Superior: soft palate
- Inferior: base of tongue, superior epiglottis
- Laterally:
  - Palatoglossal
  - Palatopharyngeal arches
  - Parapharyngeal space

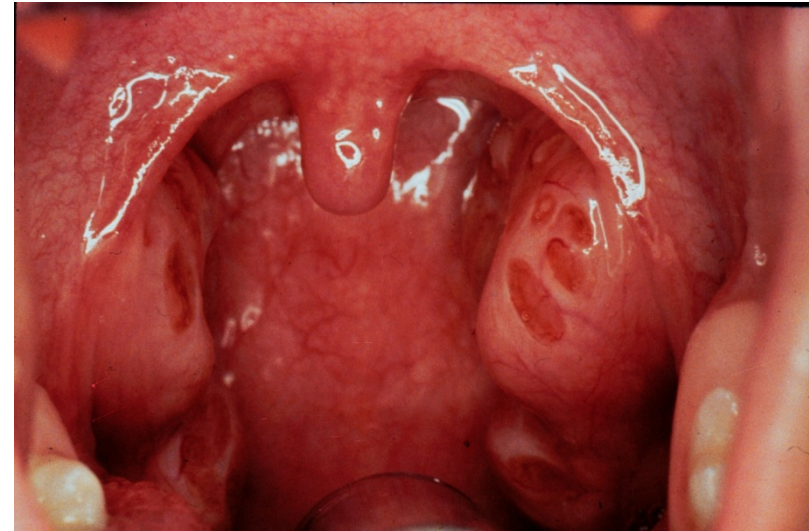
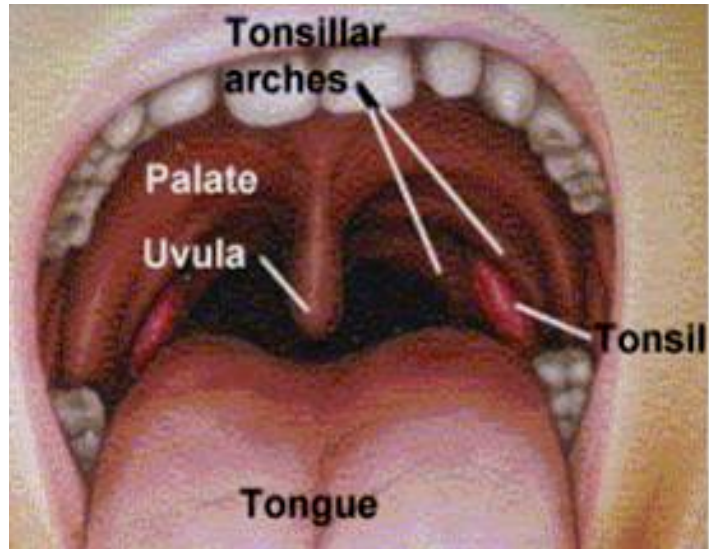
# The Oropharynx



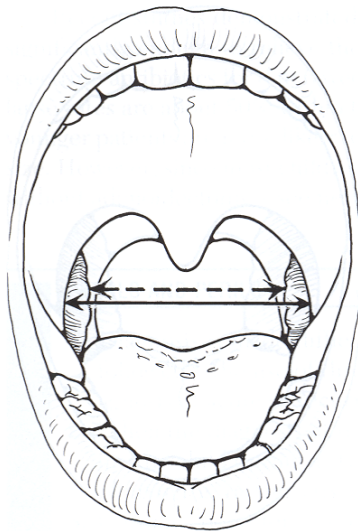
# The oropharynx



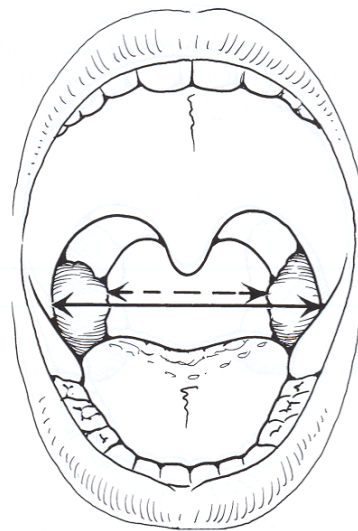
# Tonsils Size



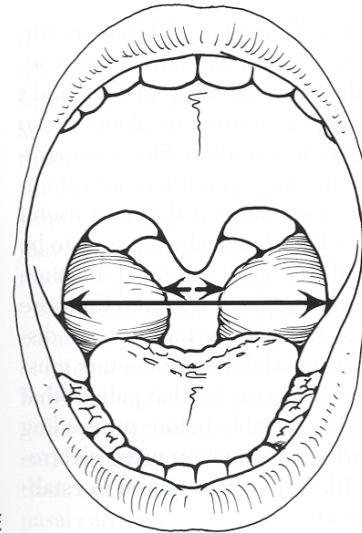
# Grading the Size of Tonsils



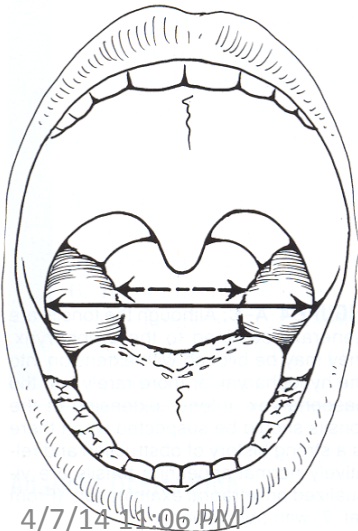
A



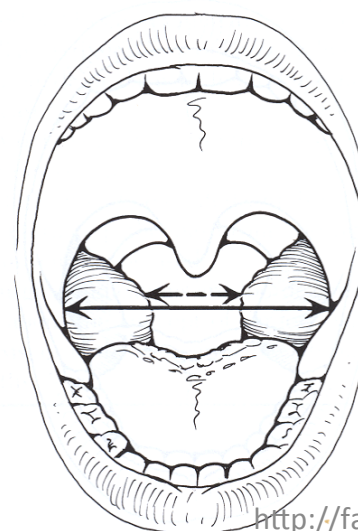
B



E



C



D

## Grading system:

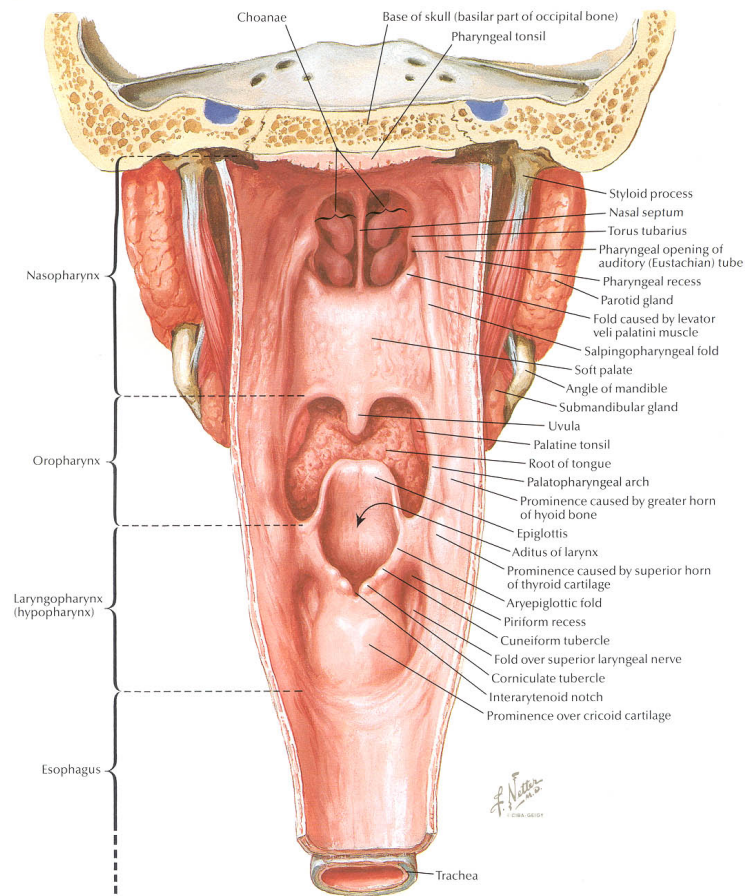
- A. 0 – tonsils in fossa**
- B. +1 – tonsils less than 25%**
- C. +2 – tonsils less than 50%**
- D. +3 – tonsils less than 75%**
- E. +4 – tonsils greater than 75%**

# *Hypopharynx*

- Digestive function
- Lies posterior to the larynx
- Superior: superior border of epiglottis and pharyngoepiglottic folds
- Inferior: inferior border of the cricoid
- Posterior/lateral: middle & inferior constrictors, bodies of C4-C6
- Anterior: laryngeal inlet

# The Laryngopharynx (Hypopharynx)

Pharynx: Opened Posterior View



# Pharyngeal Wall

Mucous membrane

Submucosa

Muscular layer

Fibrous layer (Buccopharyngeal fascia)



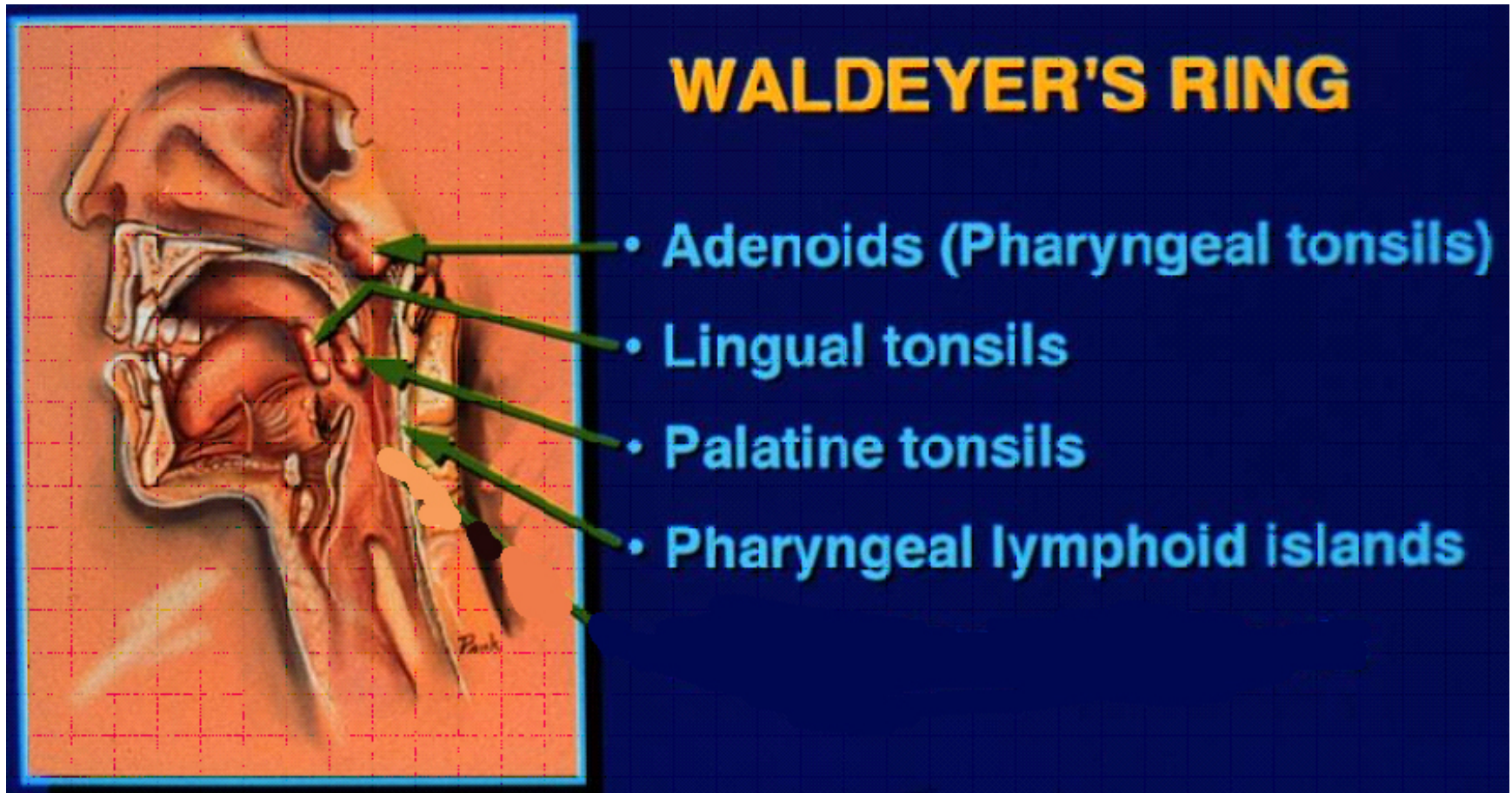
# Mucous membrane

- Nasopharynx
  - Ciliated columnar epithelium
  
- Oro and hypopharynx
  - Stratified squamous epithelium

# Submucosa

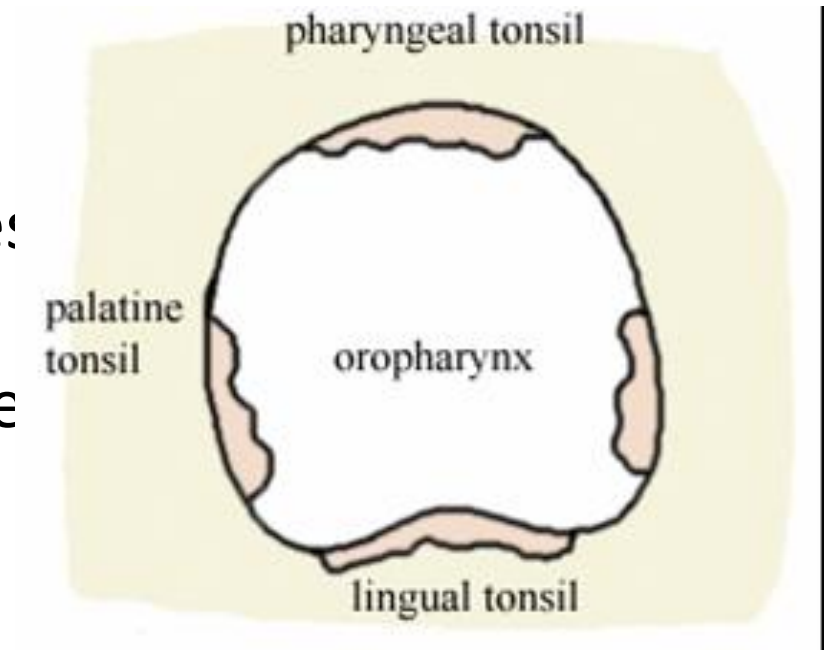
- Nerves, blood vessels, and lymphatics
- Mucous and salivary glands
- Subepithelial lymphoid tissue

# Subepithelial lymphoid tissue



# Characteristics of Waldeyer's Ring

- No afferents
- Efferent to deep cervical nodes
- No capsule except the palatine tonsils



# Pharyngeal Wall

Mucous membrane

Submucosa

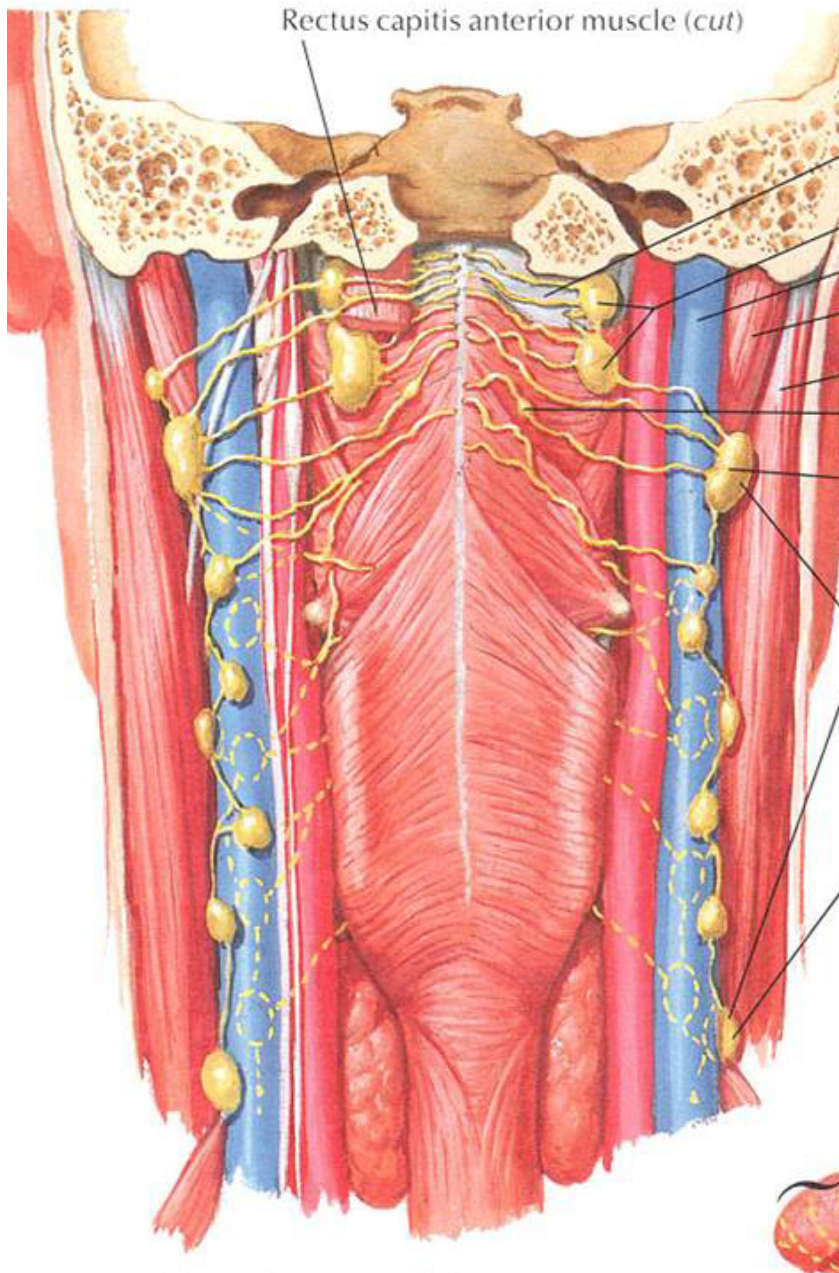
Muscular layer

Fibrous layer

Buccopharyngeal fascia

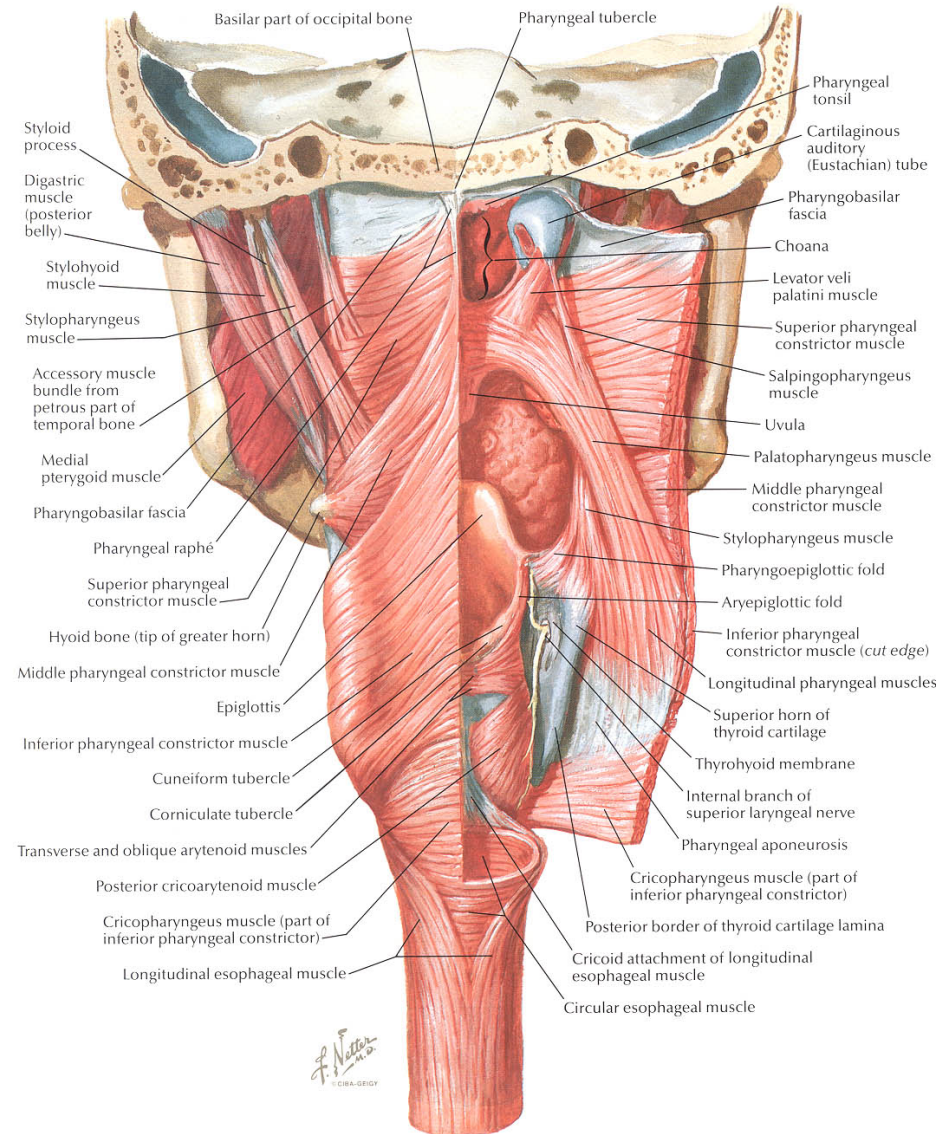
# Muscular layer

- External:
  - The three constrictors -1 –superior 2 –middle  
3 - inferior
- Internal:
  - Stylopharyngeus
  - Salpingopharyngeus
  - Palatopharyngeus



## Muscles of Pharynx: Partially Opened Posterior View

SEE ALSO PLATE 223



# Pharyngeal Wall

Mucous membrane

Submucosa

Muscular layer

Fibrous layer (Buccopharyngeal fascia)

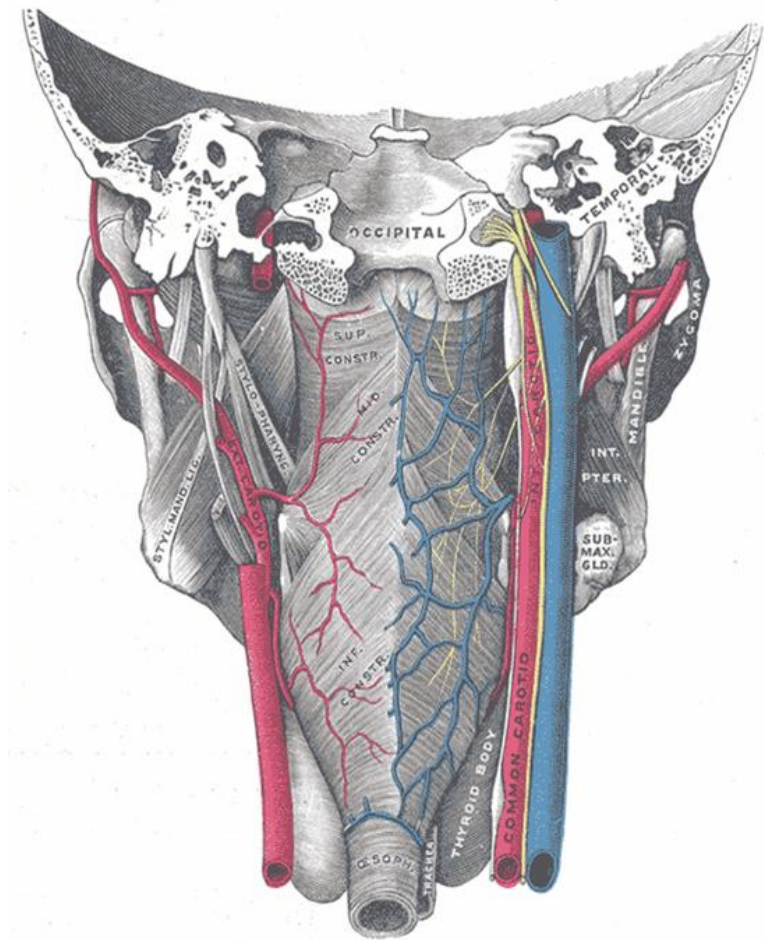


# Nerve Supply

- Trigeminal
- Glossopharyngeal
- Vagus
- Sympathetic: cervical ganglia

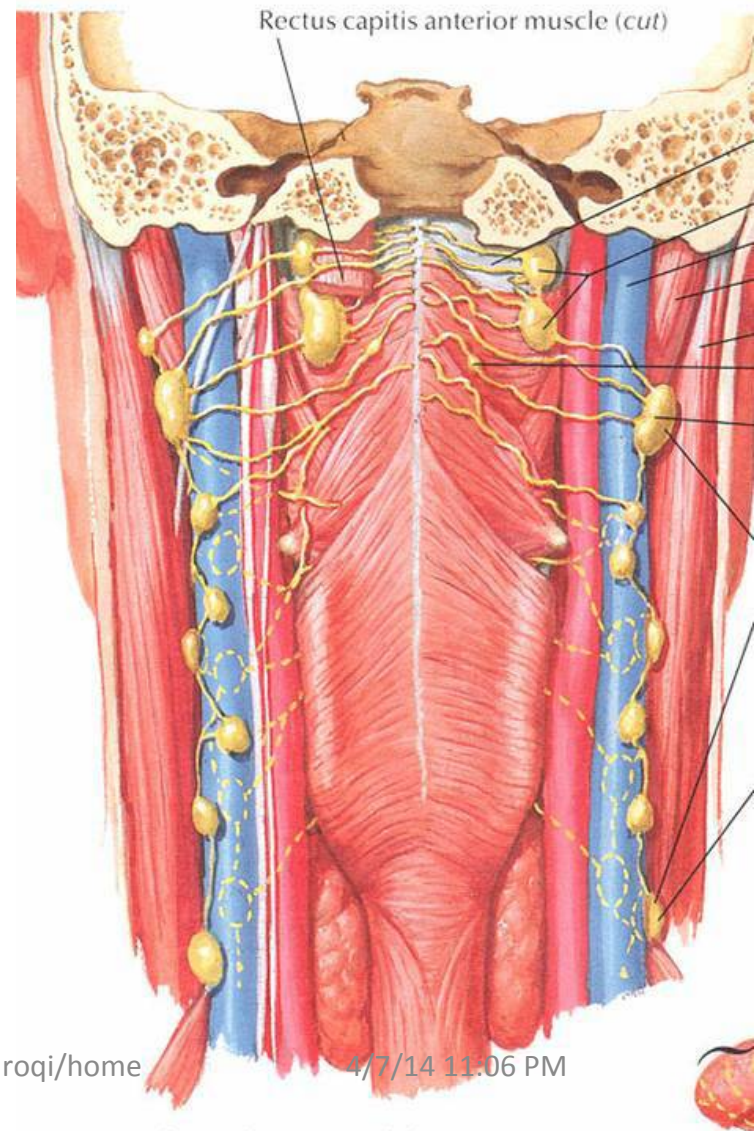
# Blood supply

- Arterial from the external carotid artery
  - Ascending pharyngeal
  - The lingual artery
  - The facial artery
  - The maxillary artery
- Venous drainage to the internal jugular

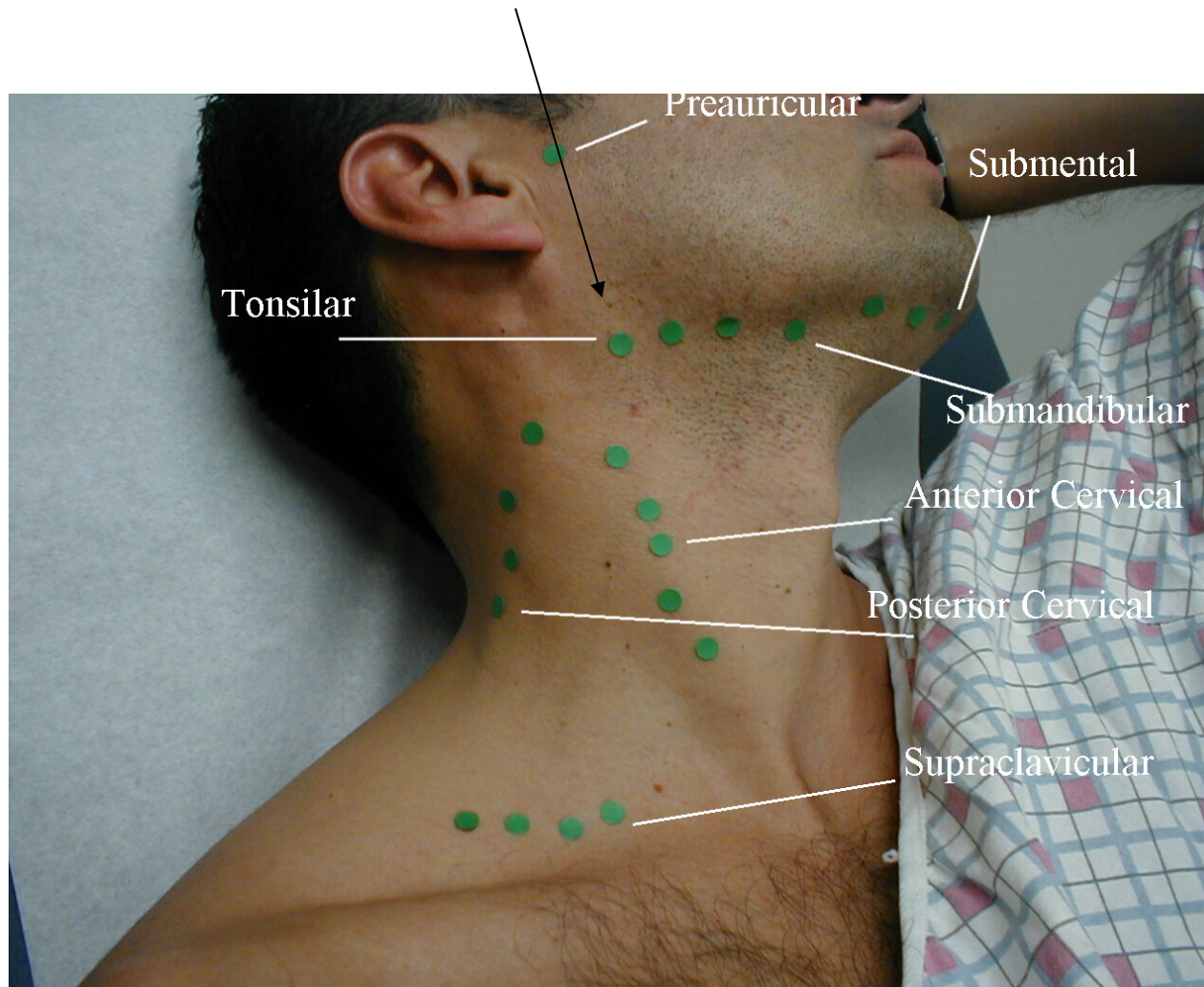


# Lymphatics

- Retropharyngeal nodes
  - Deep cervical (jugular) nodes
- nodes



# Jugulo-Diagastic nodes

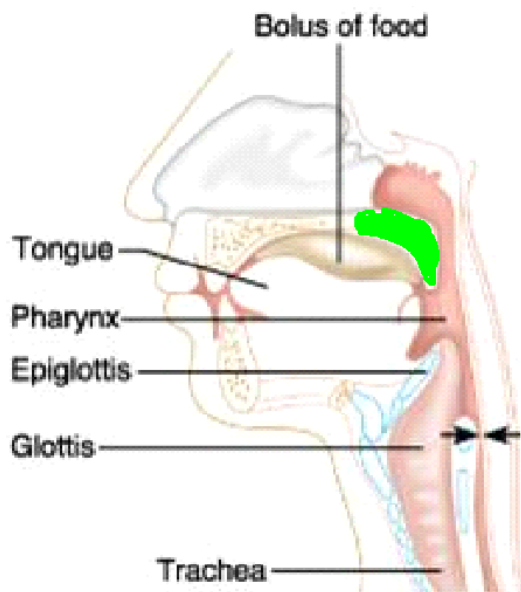


# Physiology of the Pharynx

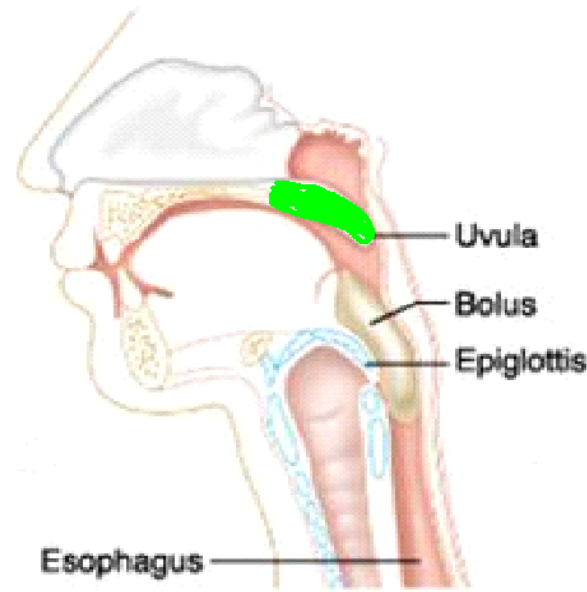
# Functions of the pharynx

- Respiratory Channel
- Deglutition

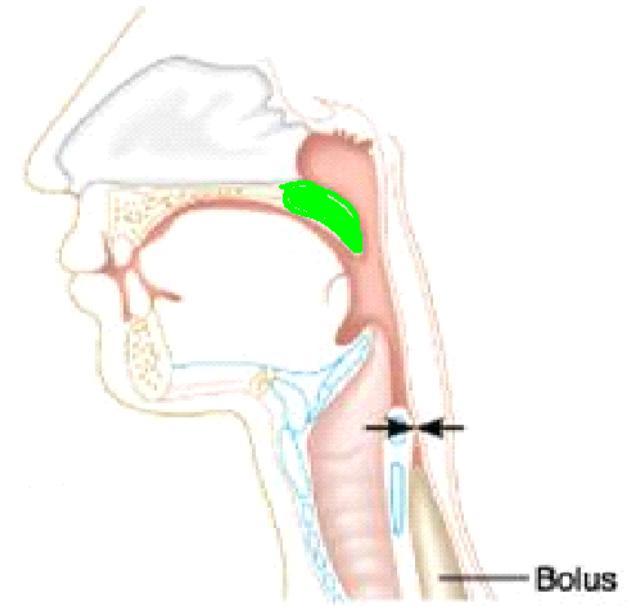
# Deglutition



Oral Stage



Pharyngeal Stage



Esophageal stage

# Functions of the pharynx

- Respiratory Channel
- Deglutition
- Speech
- Taste
- Immunity



# Immunity function of the pharynx

- Production of immunoglobulins, plasma cells and lymphocytes by the subepithelial lymphoid tissue

# DISEASES OF THE NASOPHARYNX

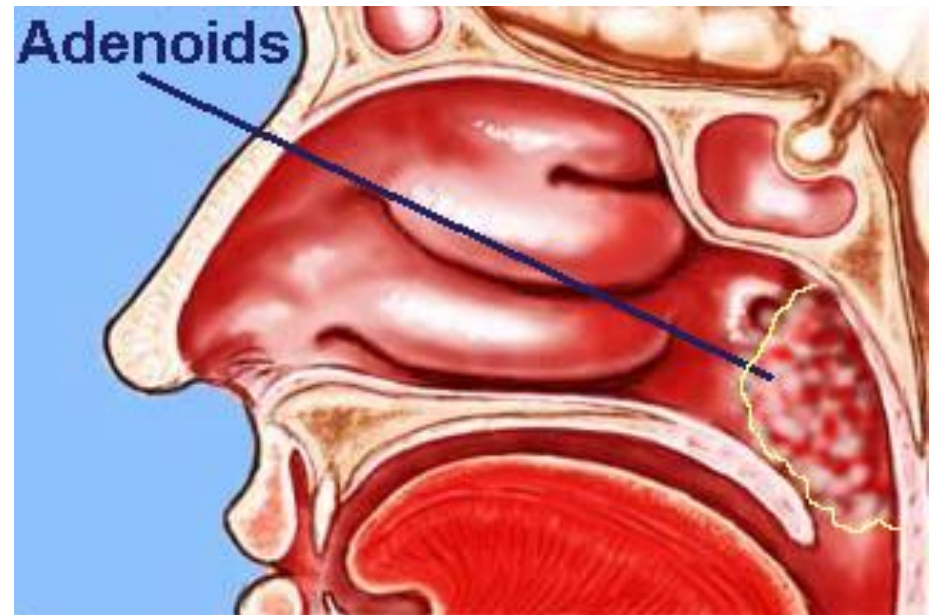
# ACUTE INFECTION OF NASOPHARYNX

- Pathologically: is a part of acute rhinitis  
(common cold)
- Clinically: has no specific clinical features

# ADENOIDS

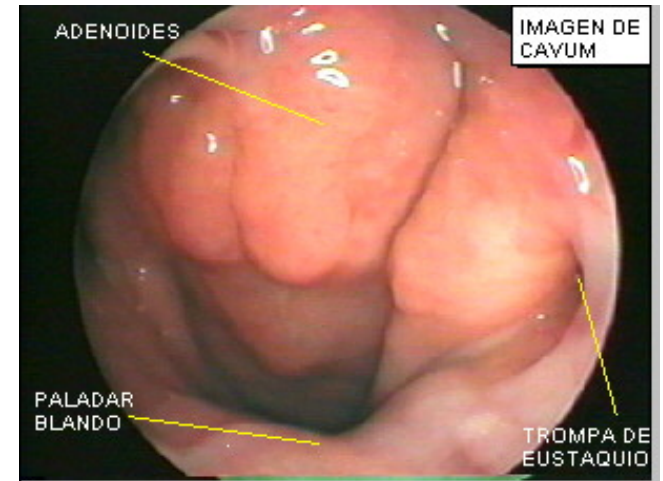
# DEFINITION

- Hypertrophy of the nasopharyngeal tonsils sufficient to produce symptoms



# CLINICAL FEATURES

- Usually in children
- Nasal obstruction
  - Mouth breathing
  - Snoring, sleep disturbance, apnea etc
- Ear symptoms due to Eustachian tube obstruction
- Adenoid face



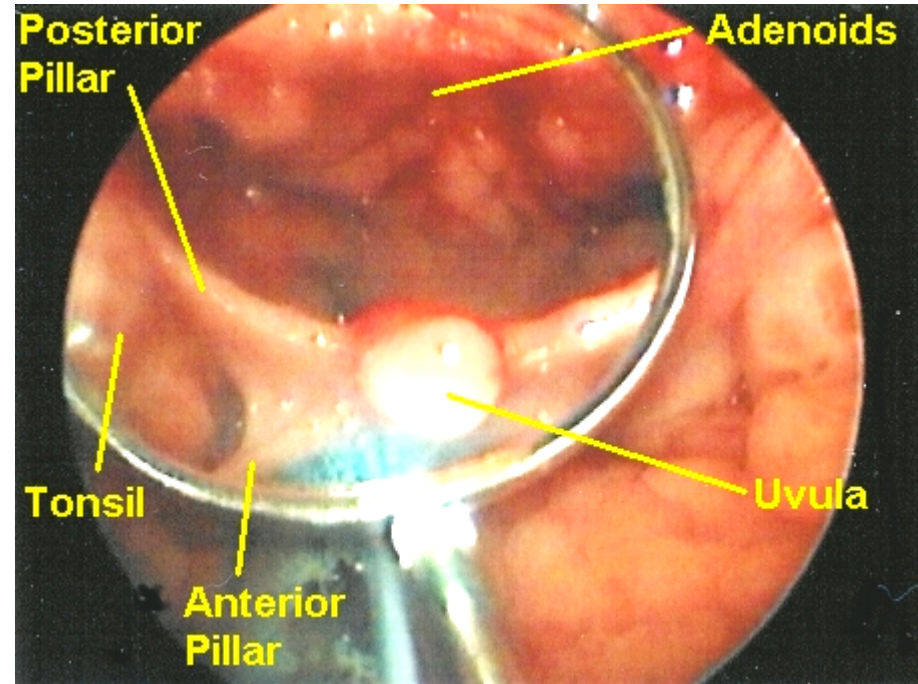
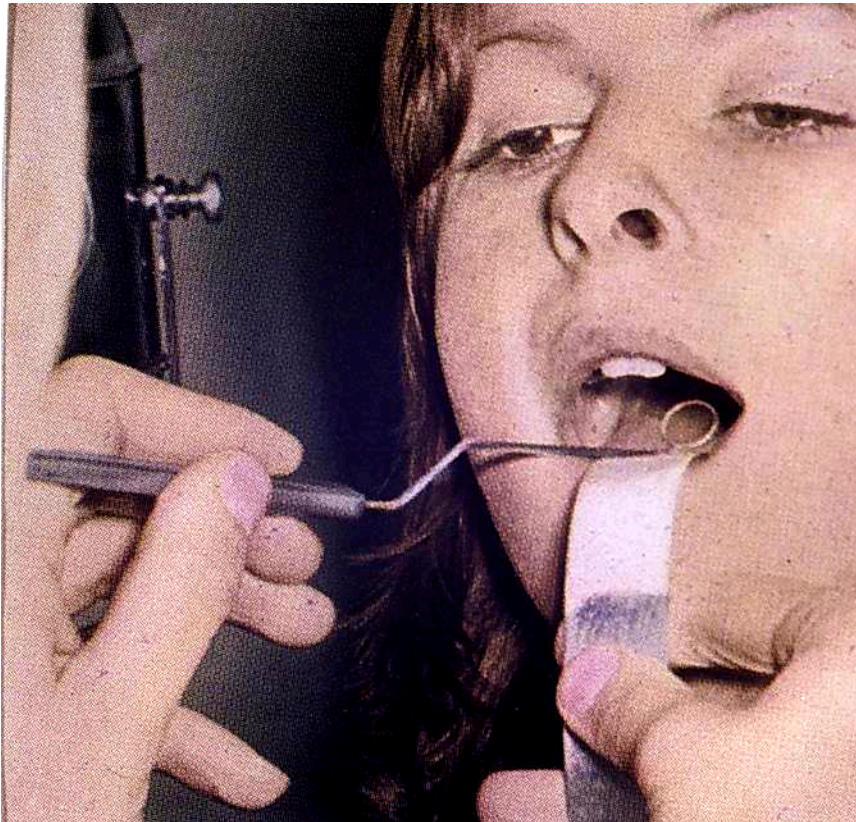
# Adenoid

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- **Child**
- **Snoring**
- **Mouth breathing**
- **Nasal Tone**
- **Bilateral OME**
- **Bilateral nasal obstruction**

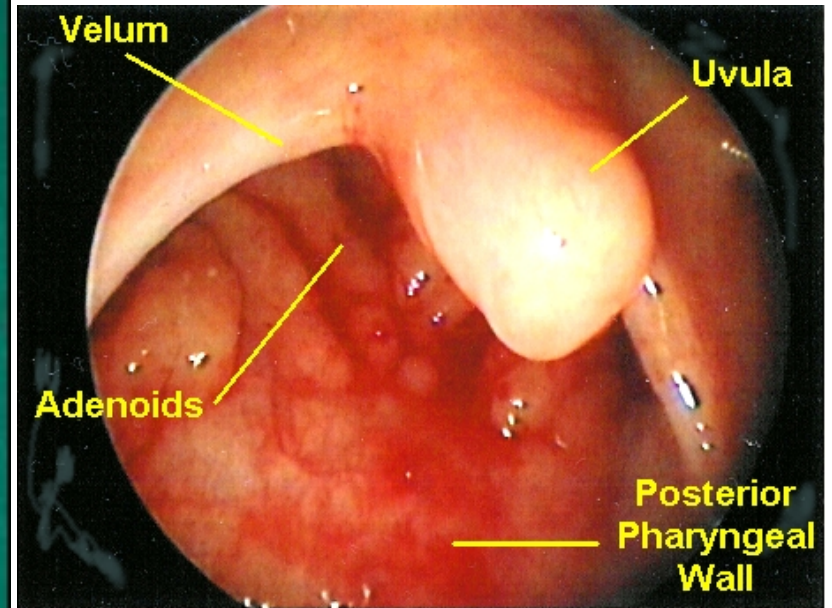


# EXAMINATION

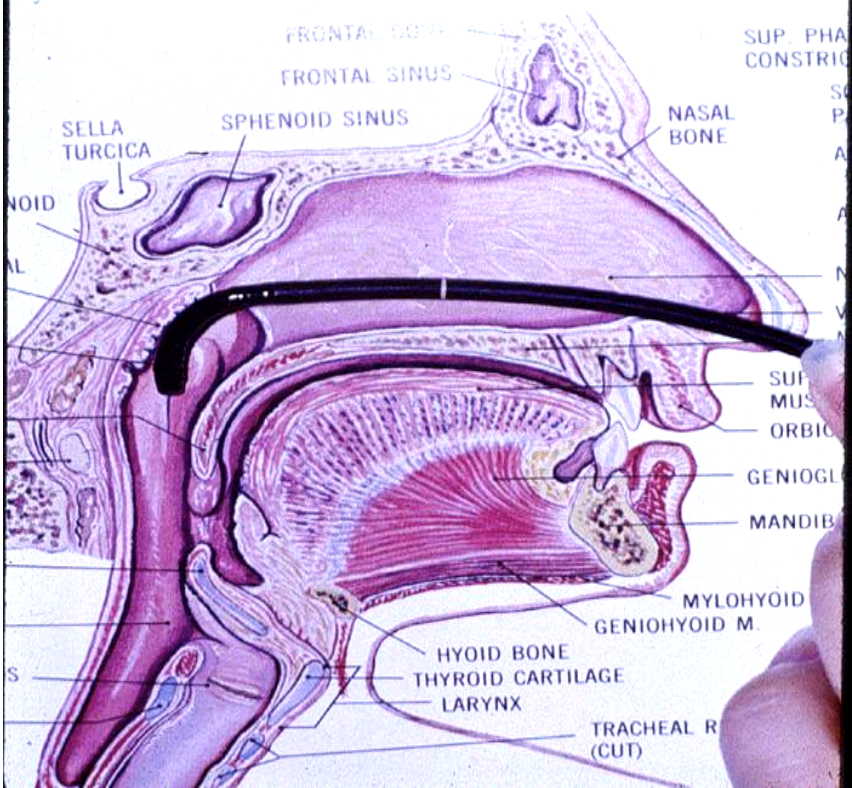
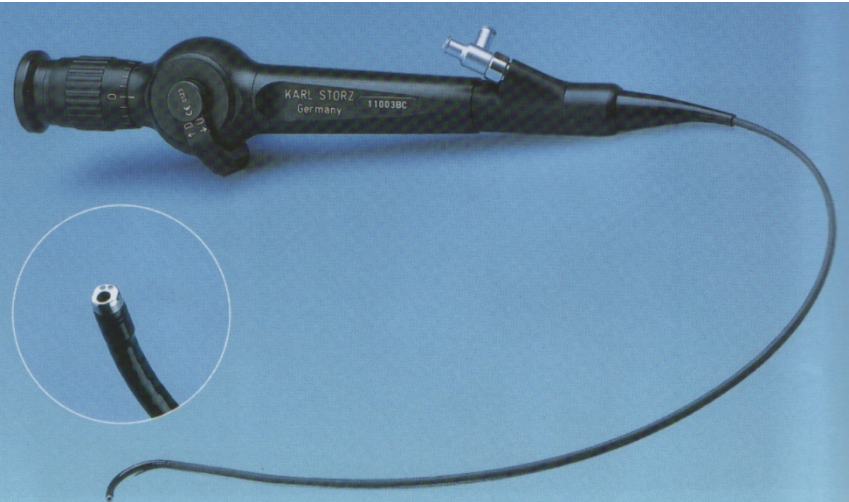


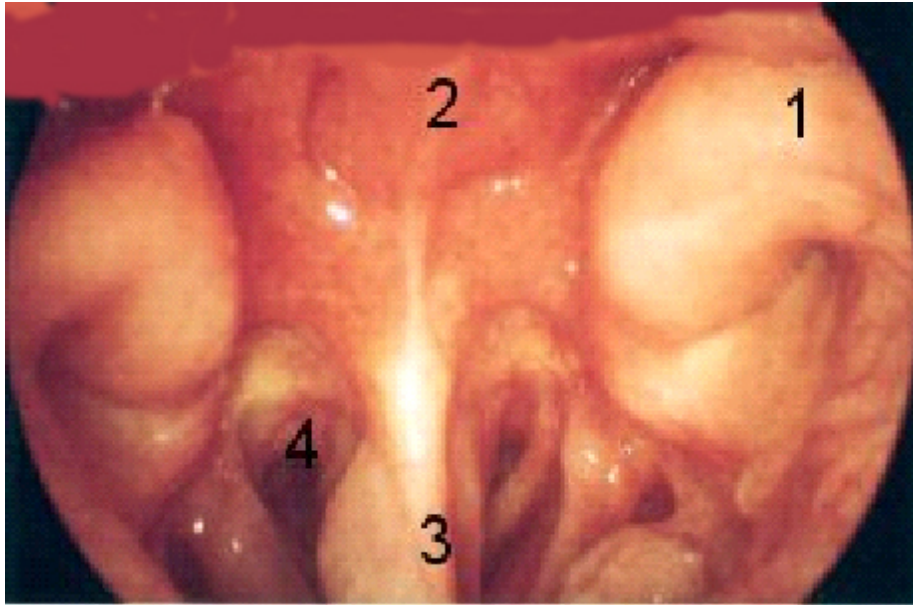


# EXAMINATION

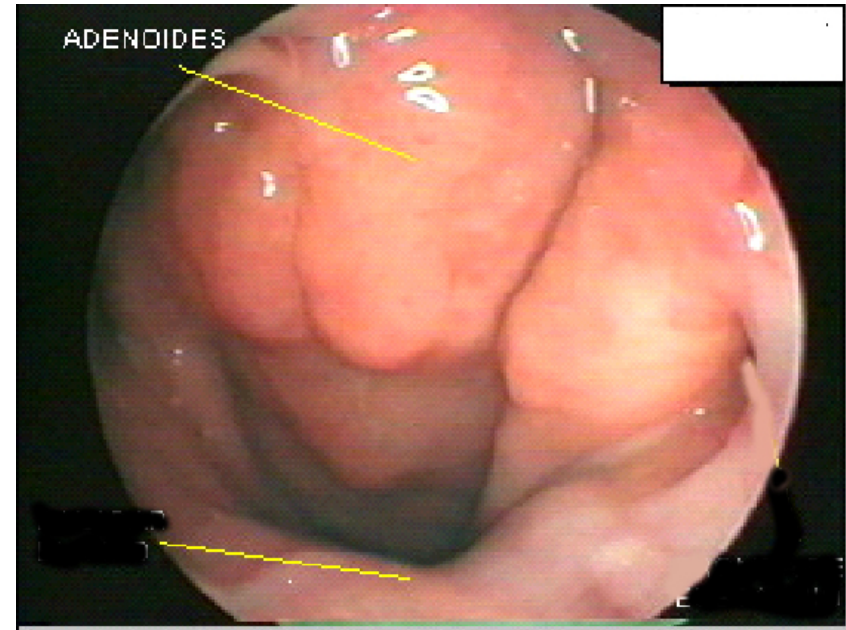


# EXAMINATION

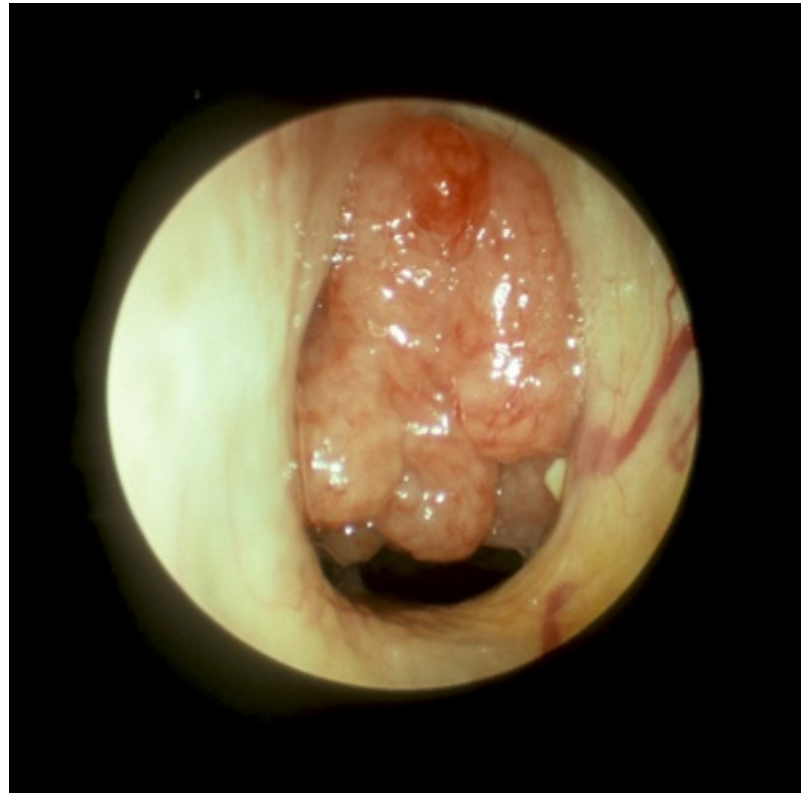




**Normal nasopharynx**



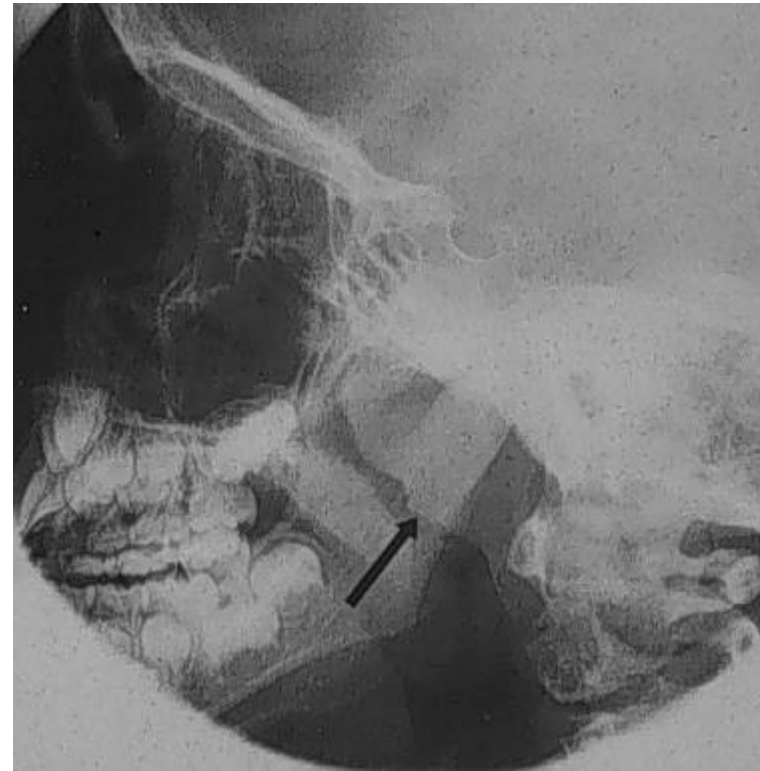
**Adenoid**



# PLAIN X- RAY

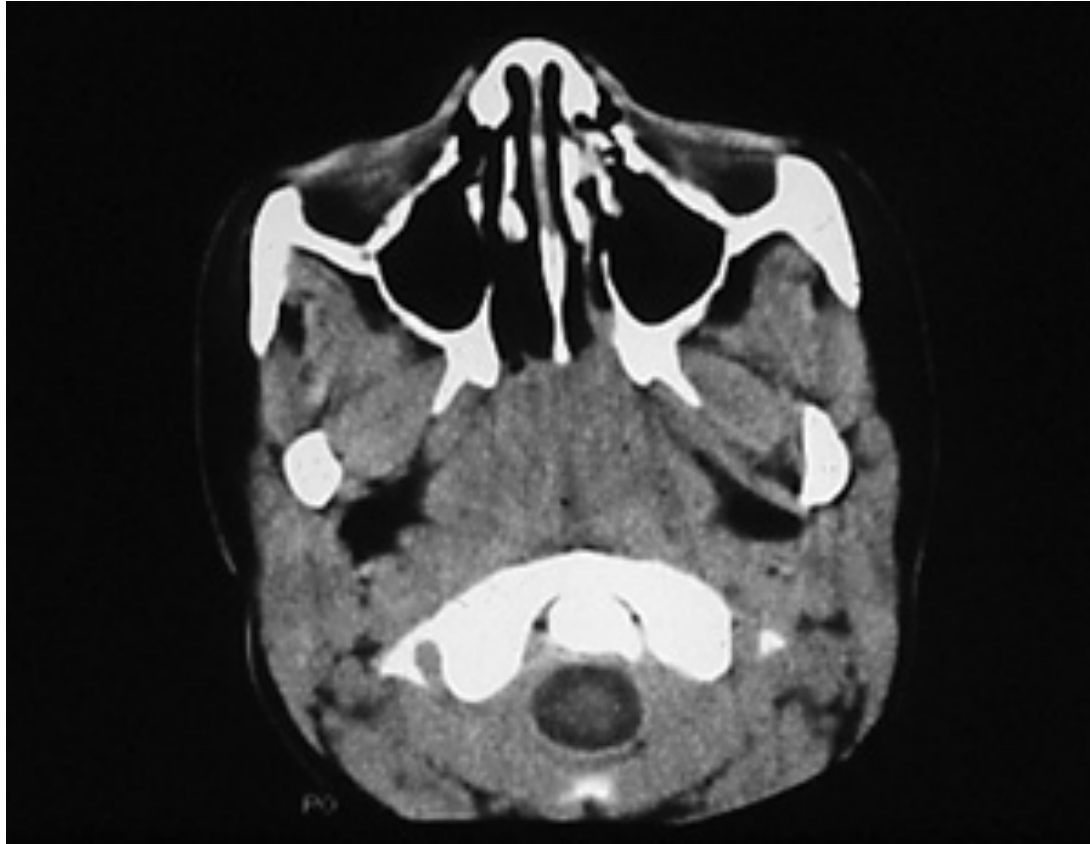


Normal



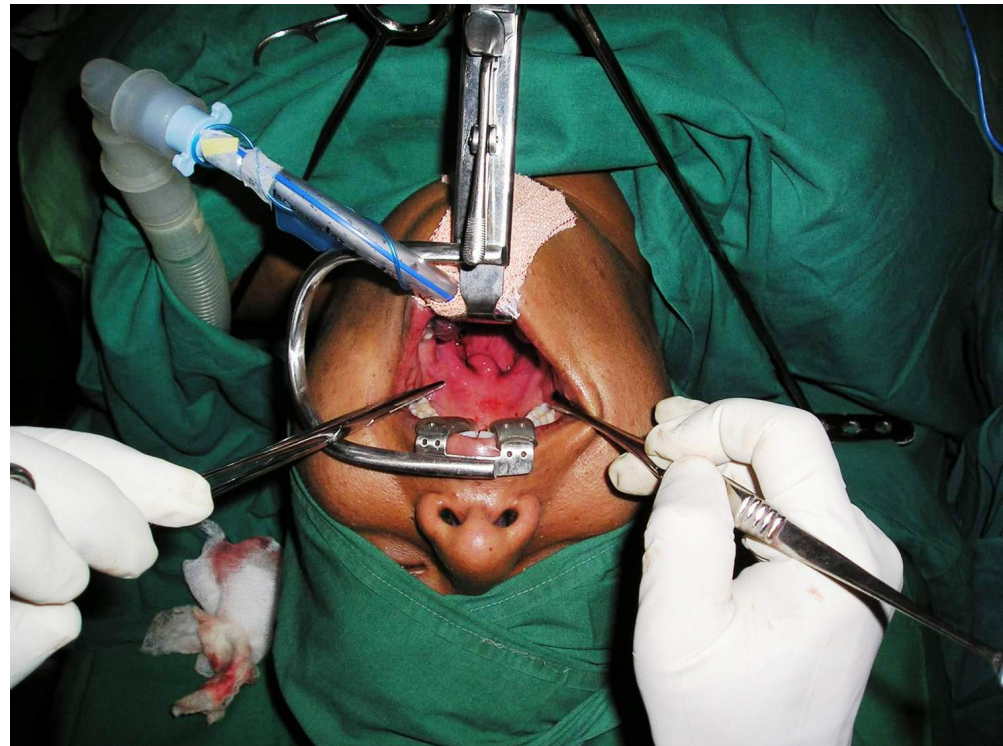
Adenoid





# TREATMENT

## Adenoidectomy

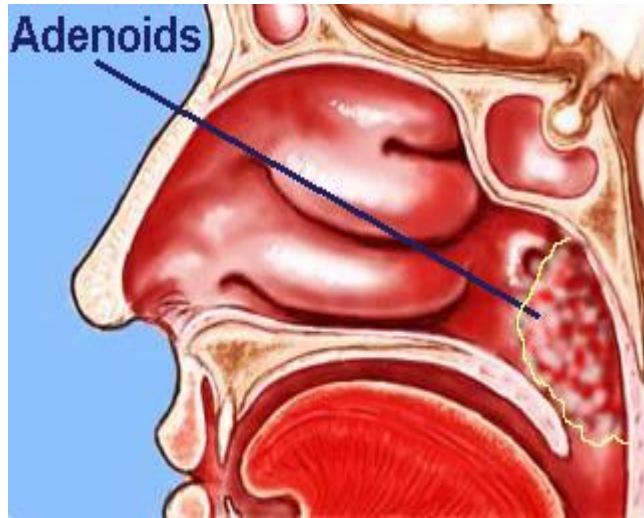






# Local Contraindication of Adenoidectomy

## Palatopharyngeal incompetence



# DISEASES OF THE OROPHARYNX

# ACUTE INFECTIONS OF THE OROPHARYNX

- Acute tonsillitis
- Acute non-specific pharyngitis
- Acute diphtheria
- Infectious mononeuclosis
- Vincent' s angina
- Scarlet fever
- Moniliasis

# ACUTE TONSILLITIS

# ETIOLOGY

- A disease of childhood, with a peak incidence at about 5 to 6 years of age

# CAUSATIVE ORGANISMS

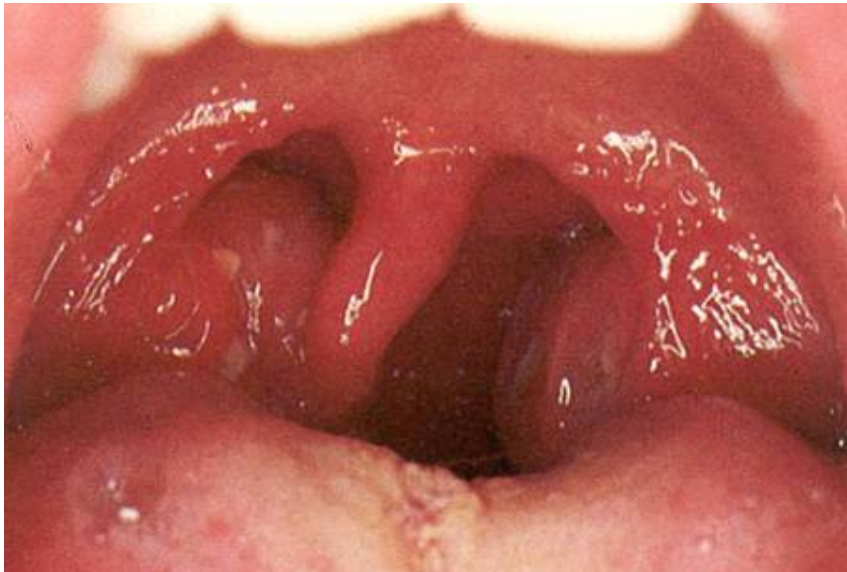
- Viral:
  - Influenza, Parainfluenza, Rhinovirus, Adenoviruses, Respiratory syncytial virus, Coronaviruses
- Bacterial:
  - Beta Hemolytic Streptococcus (Group A)
  - Others: Strept pneumonia, H. infleunzae, Staph. aurius etc

# Clinical features

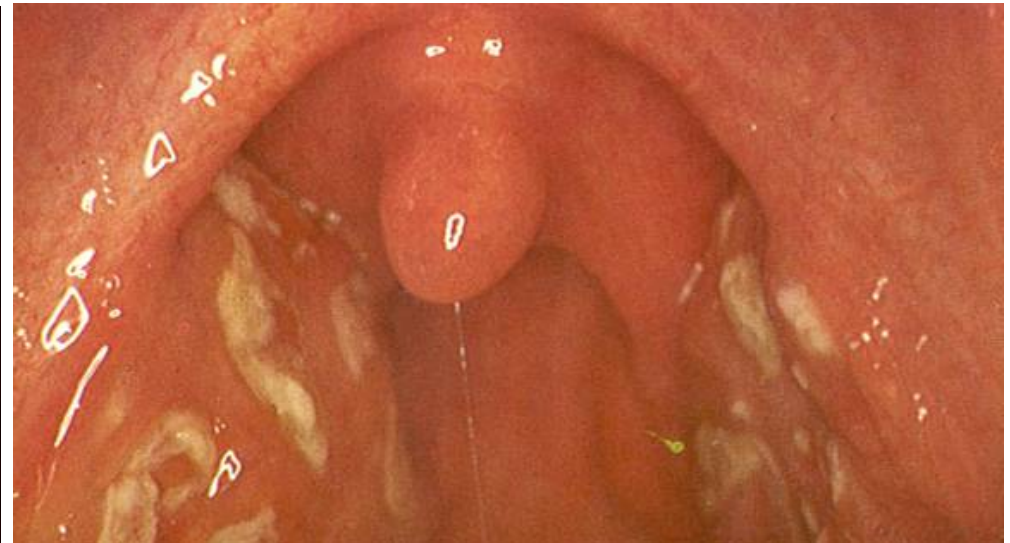
- Malaise, fever, headache, limb and back pain
- Sore throat, odynophagia, dysphagia
- Otalgia



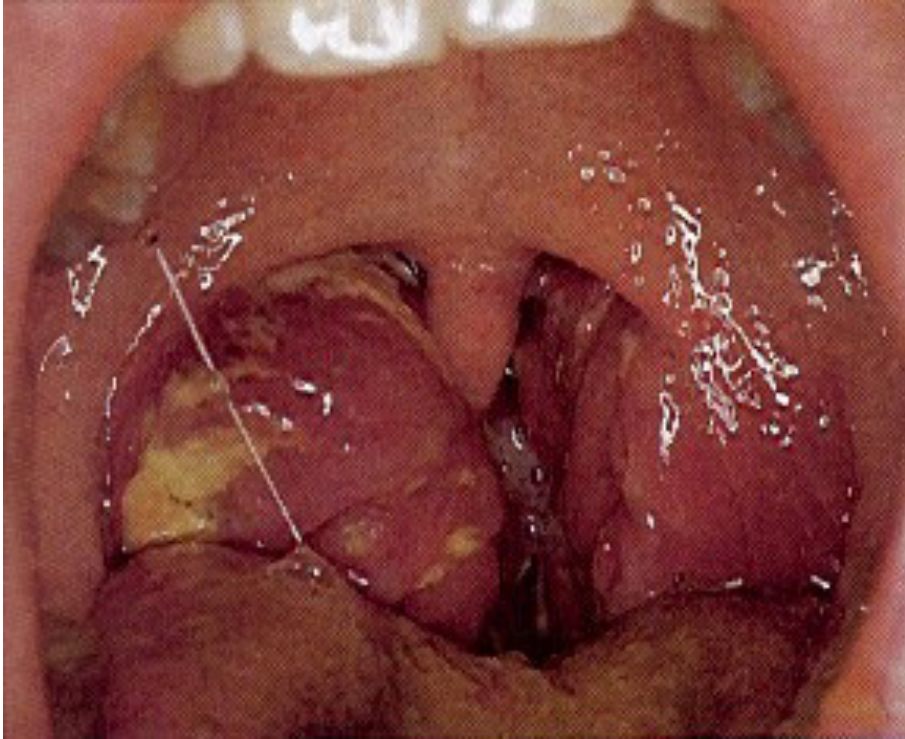
# THROAT EXAMINATION

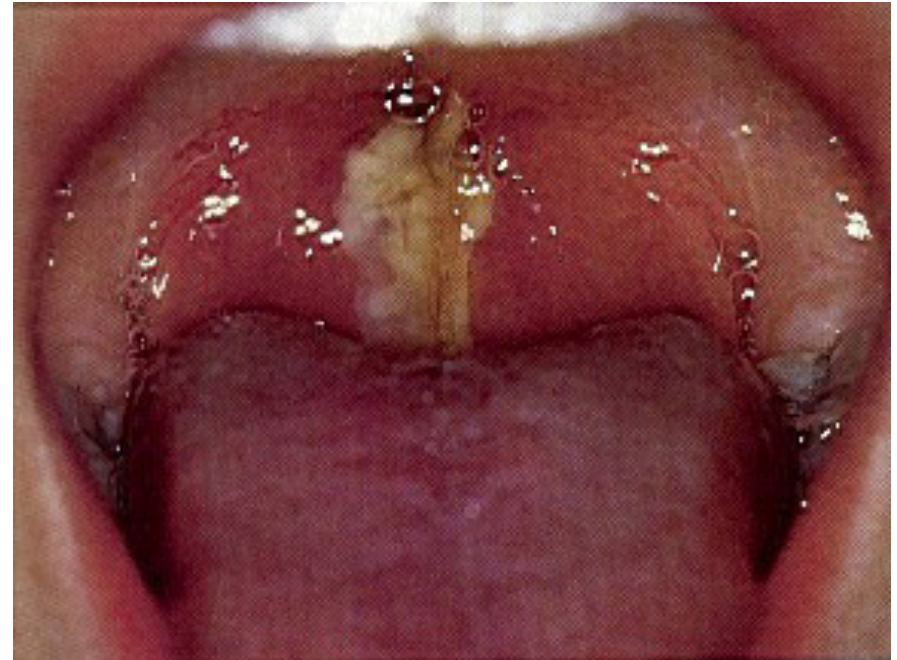
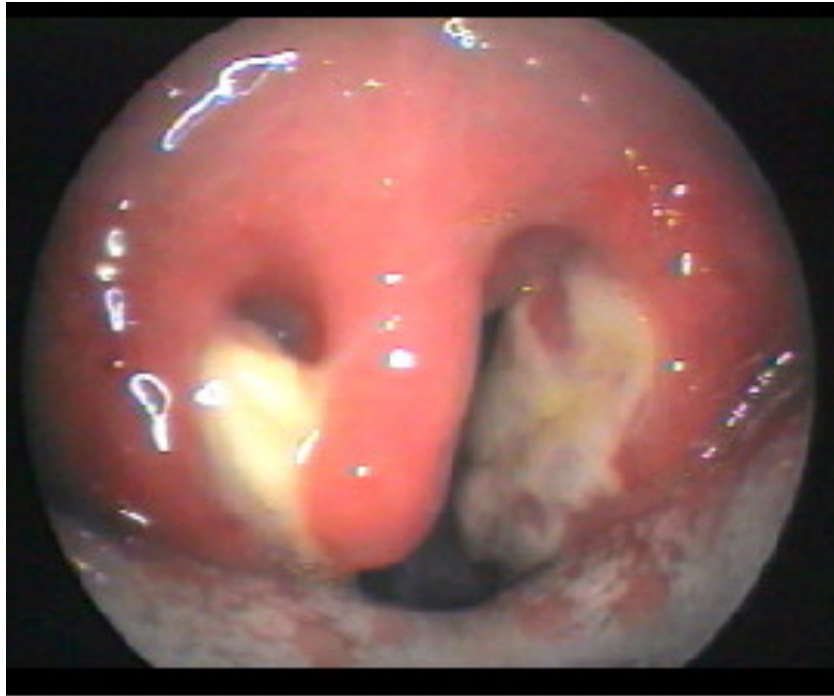


A. Parenchymatous tonsillitis



B Follicular tonsillitis





## C. Membranous tonsillitis

# NECK EXAMINATION

Enlargement and tenderness of the jugulo-digastric lymph nodes



# INVESTIGATIONS

- Throat swab
- CBC



# TREATMENT

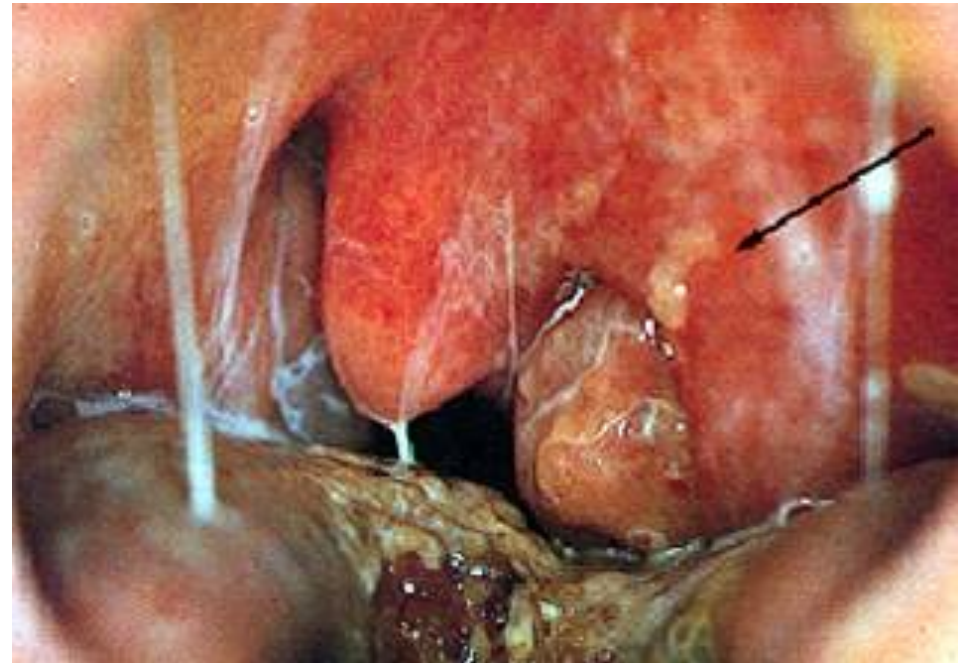
- Symptomatic & supportive treatment
- Antibiotics
  - Penicillin V for 5-7days – drug of choice
  - Erythromycin – second line
  - Amoxicillin and Ampicillin – better absorption

# COMPLICATIONS OF ACUTE TONSILLITIS

- General:
  - Acute rheumatism
  - Acute glomerulonephritis
  - Septicaemia
- Local:
  - **Peritonsillitis & peritonsillar abscess ( Quinsy)**

# PERITONSILLAR ABSCESS (QUINSY)

- An abscess between the tonsil capsule and the adjacent lateral pharyngeal wall





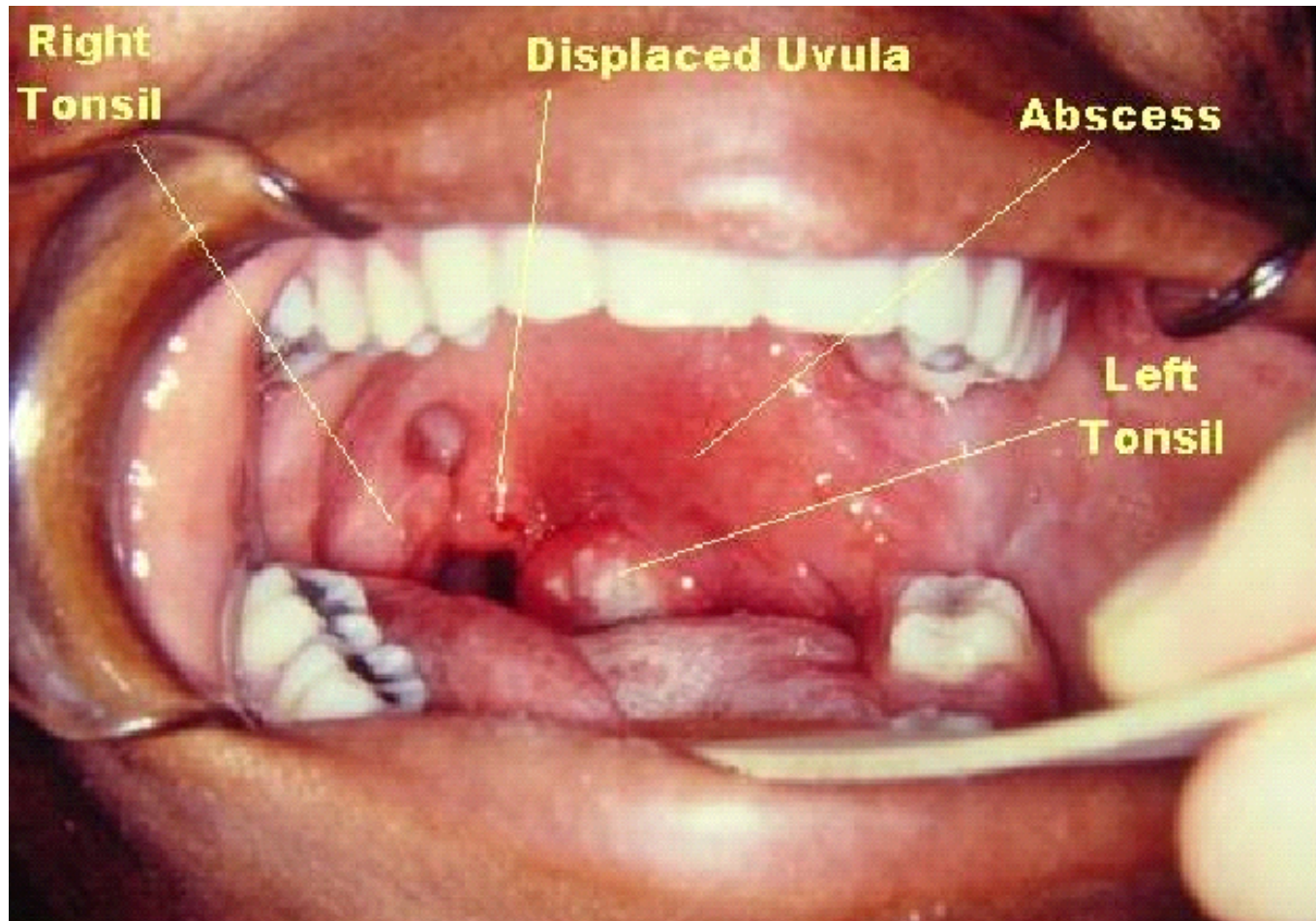
# CLINICAL FEATURES

- More common in adults
- Usually unilateral
- Usually follow an attack of tonsillitis
- Severe pain > one side
- Unilateral earache and cervical lymphadenitis
- More odynophagia & drooling
- Trismus
- Thickened speech (hot potato voice)

# EXAMINATION

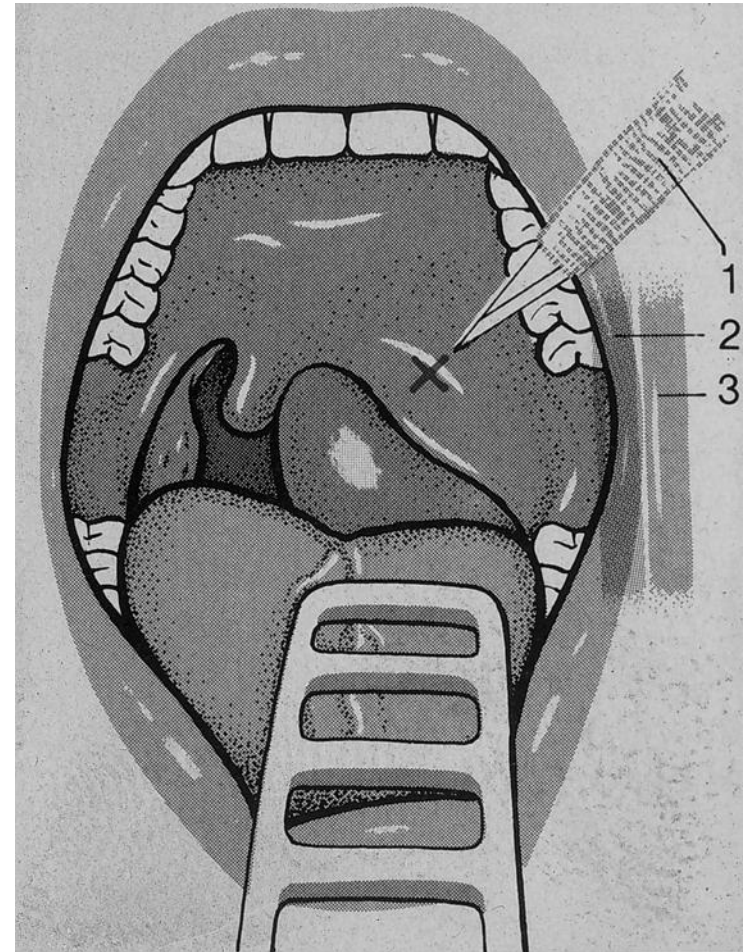


# EXAMINATION



# TREATMENT

- IV antibiotics
- Incision and drainage followed by elective tonsillectomy 6 -8 weeks later
- ? Hot (abscess) tonsillectomy



# COMPLICATIONS OF ACUTE TONSILLITIS

- General:
  - Acute rheumatism
  - Acute glomerulonephritis
  - Septicaemia
- Local:
  - Peritonsillitis & peritonsillar abscess ( Quinsy)
  - **Neck Abscess**

# Neck abscess



# COMPLICATIONS OF ACUTE TONSILLITIS

- General:
  - Acute rheumatism
  - Acute glomerulonephritis
  - Septicaemia
- Local:
  - Peritonsillitis & peritonsillar abscess ( Quinsy)
  - Neck Abscess
  - **Parapharyngeal abscess**