



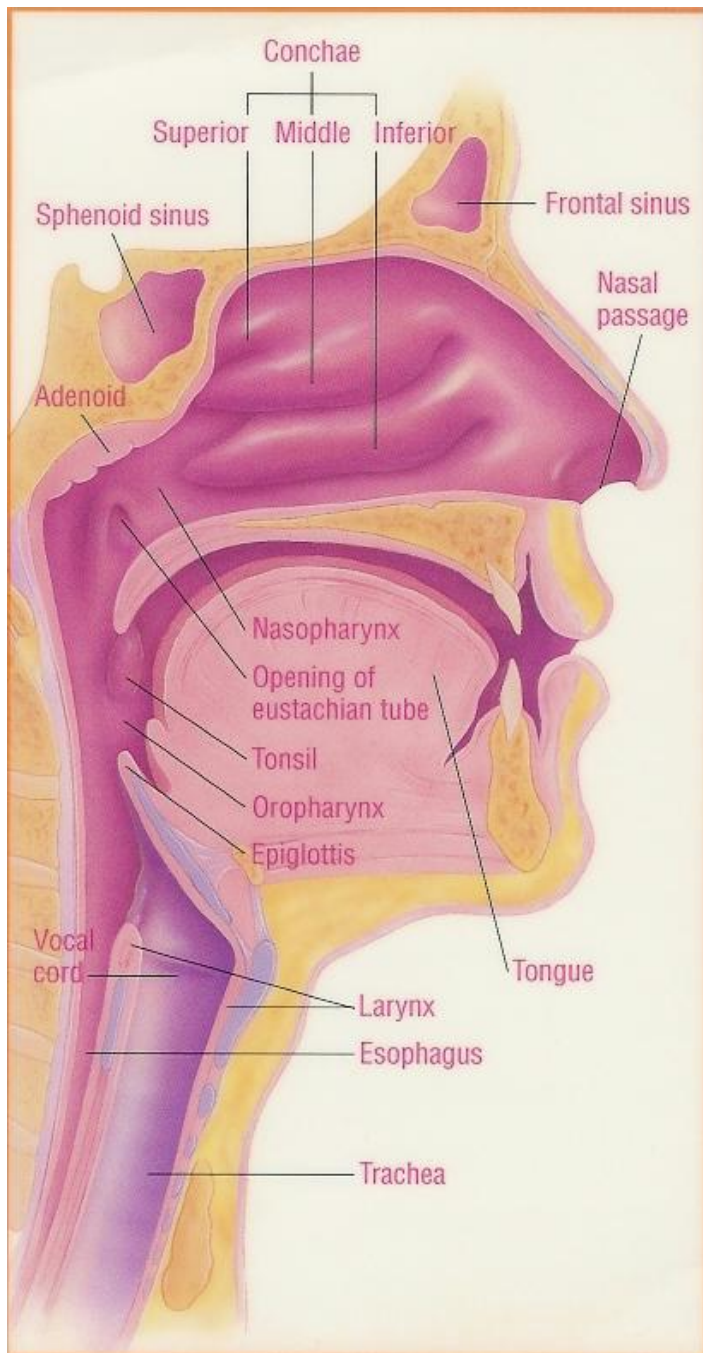
ENT PATHOLOGY

Nasal cavities

Paranasal sinuses

Nasopharynx

Larynx



<http://www.ghorayeb.com/anatomysinuses.html>



Nasal Cavities & Paranasal Sinuses

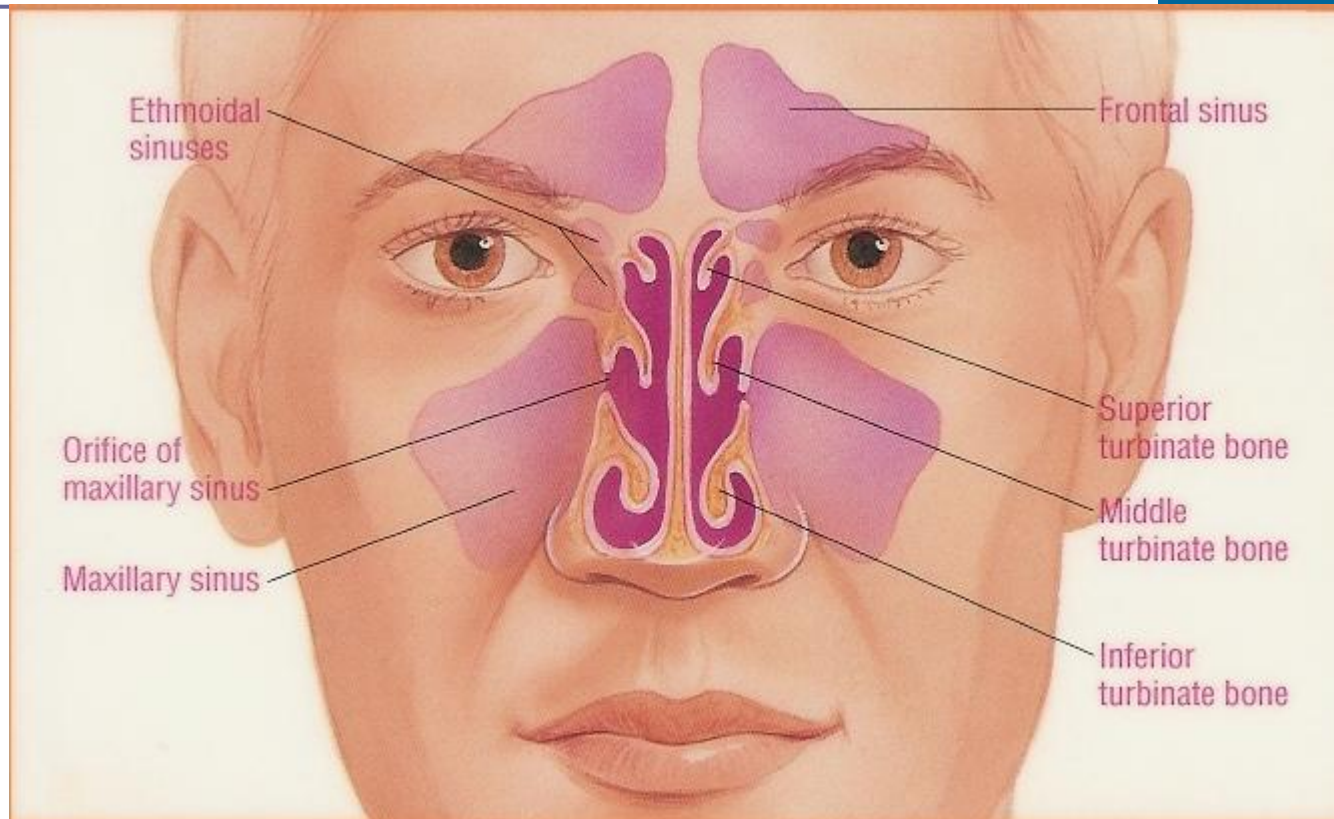
Inflammation (nasal cavity): Rhinitis

- **Infectious rhinitis** (“common cold”)
 - Viral (adenoviruses, ECHOviruses, rhinoviruses)
- **Allergic rhinitis** (“hay fever”)
 - Plant pollen, dust mites, animal allergens
 - Recurrent episodes —————> chronic rhinitis
 - **Complications:** inflammatory (sinonasal) polyps, sinusitis, superimposed bacterial infection

Inflammation (paranasal sinuses): Sinusitis

■ Infectious sinusitis

- Usually bacterial
- Antecedent bacterial rhinitis or tooth infection
- **Complications:** empyema, orbital osteomyelitis, bacterial meningitis, dural venous sinus thrombophlebitis



<http://www.ghorayeb.com/anatomysinuses.html>

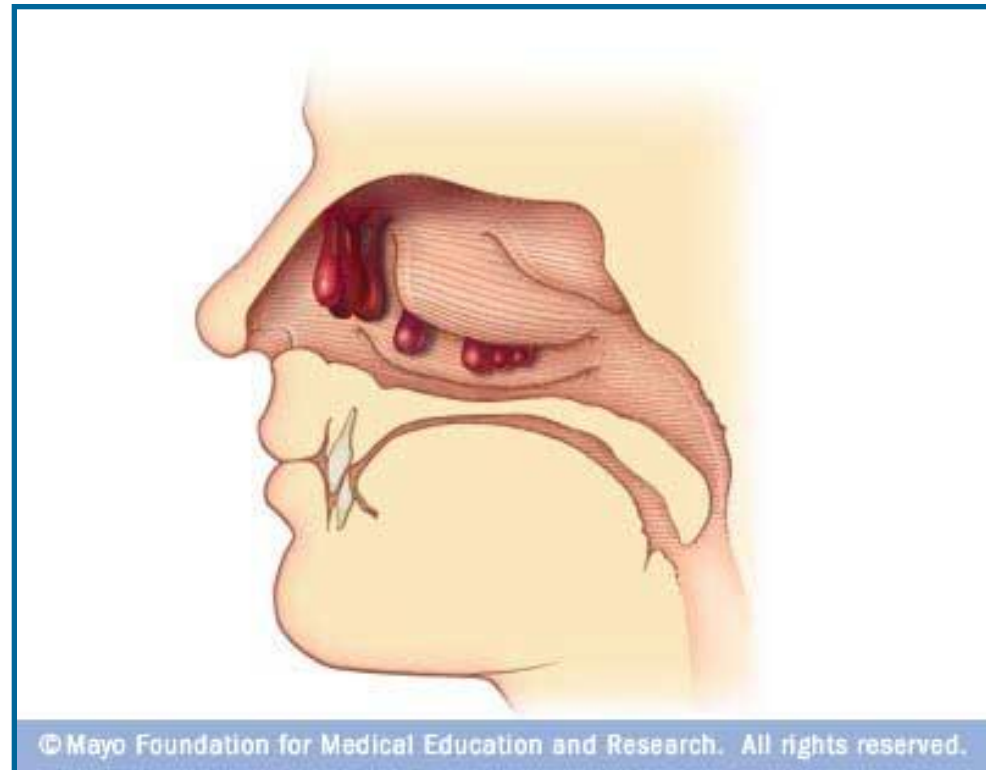
Inflammation (paranasal sinuses): Sinusitis

■ Allergic sinusitis

- Plant pollen, dust mites, animal allergens
- +/- antecedent allergic rhinitis
- **Complications:** inflammatory (sinonasal) polyps, mucocoele, superimposed bacterial infection

Inflammation: Sinonasal Polyps

- Inflammatory polyps
- Complication of chronic allergic rhinitis or chronic allergic sinusitis
- Nasal cavities & paranasal sinuses
- Usually multiple & bilateral



Inflammation: Sinonasal Polyps

■ GROSS MORPHOLOGY:

- Polypoid
- Translucent
- Moist
- Oedematous

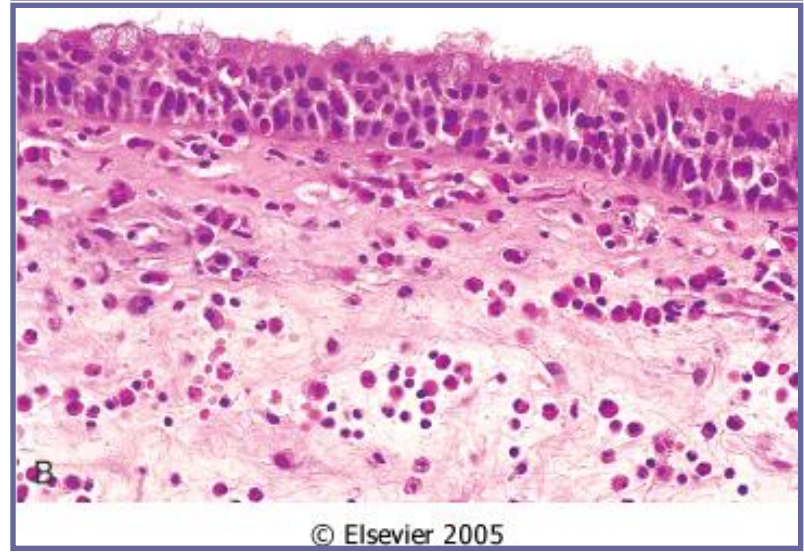


<http://www.ghorayeb.com/NasalPolyps.html>

Inflammation: Sinonasal Polyps

MICROSCOPY:

- Polypoid masses
- Respiratory epithelium
- Stroma containing mucous glands, eosinophils, lymphocytes, plasma cells



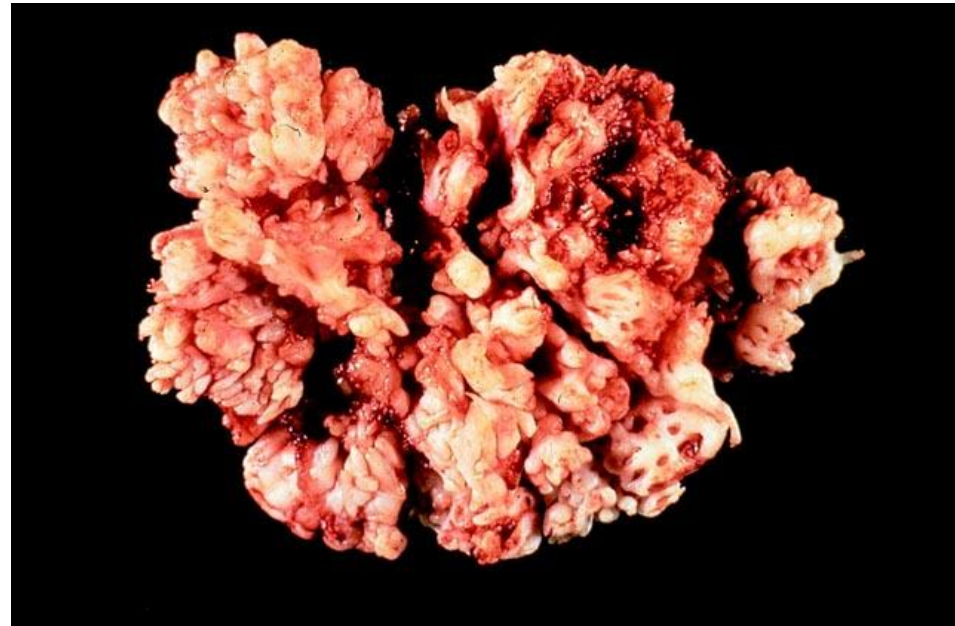
Benign tumours: Sinonasal Papillomas

- 30 – 50 yr; M:F = 2:1
- Multifocal, but usually unilateral
- Unilateral nasal obstruction (commonest complaint)
- Epistaxis, facial pain, purulent nasal discharge
- Proptosis (inverted papillomas)
- Risk of carcinoma with **inverted** variety

Benign tumours: Sinonasal Papillomas

GROSS MORPHOLOGY:

- Soft to firm, polypoid
- **Fungiform** variety found on nasal septum
- **Inverted** variety found on lateral nasal wall & in paranasal sinuses



Benign tumours: Sinonasal Papillomas

MICROSCOPY:

Fungiform papilloma:

- Fingerlike projections of stratified squamous epithelium covering fibrovascular stroma



Inverted papilloma:

- Invaginated nests of benign stratified squamous epithelium



Malignant Sinonasal Tumours

CARCINOMAS

- **Squamous cell carcinoma (67%)**
- **Adenocarcinoma (10 – 20%)**

OTHERS

- Olfactory neuroblastoma
- Lymphoma
- Sarcoma

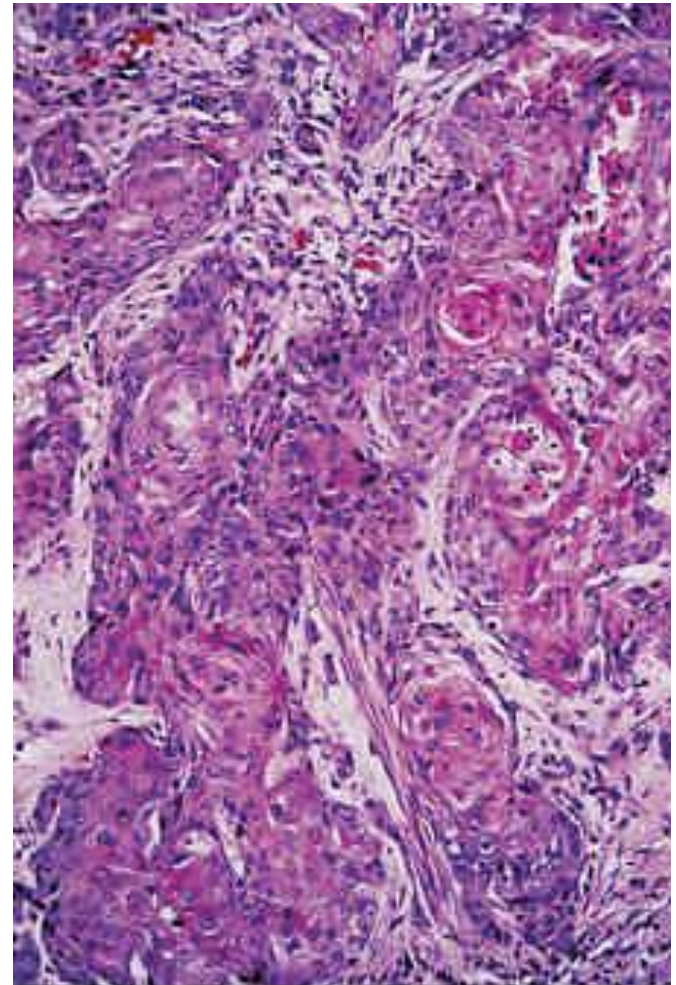
Sinonasal Squamous Cell Carcinoma

- 50 – 70 yr.; M:F = 2:1
- **Nasal tumours:** nasal obstruction, rhinorrhoea, epistaxis, pain
- **Sinus tumours:** symptoms similar to those of chronic sinusitis
- Risk factors: cigarette smoking, nickel ore, inverted papilloma

Sinonasal Squamous Cell Carcinoma

MICROSCOPY:

Usually, keratinizing
type of squamous cell
carcinoma

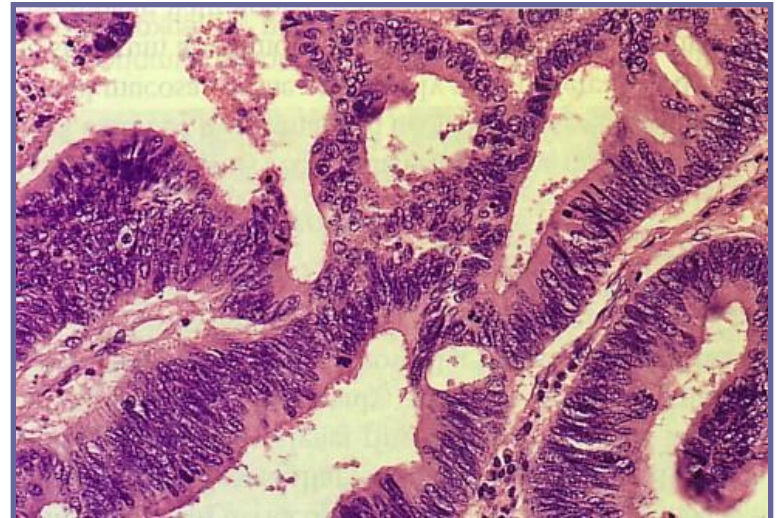
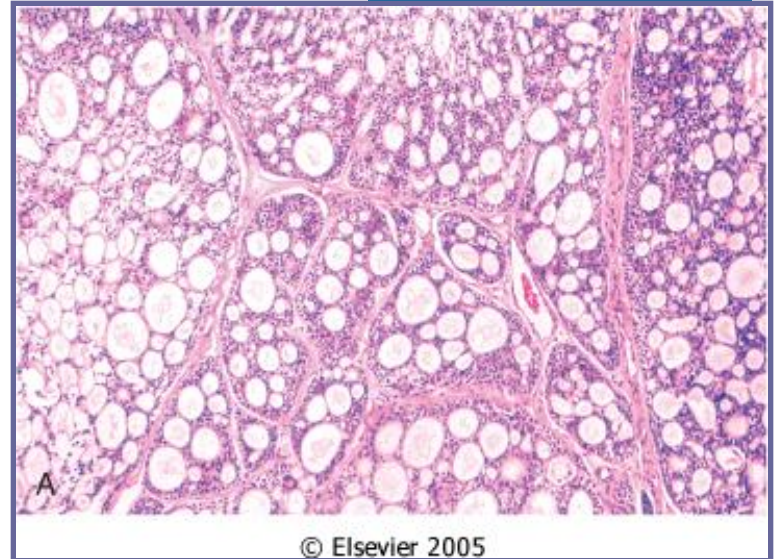


Sinonasal adenocarcinoma

- Risk factors: wood dust, leather tanning agents
- Salivary gland type
 - Usually adenoid cystic variety
 - M=F, 50 – 60 yr
 - Maxillary sinus*, nasal cavity, ethmoid sinuses, sphenoid sinus
- Non-Salivary gland type
 - Rare

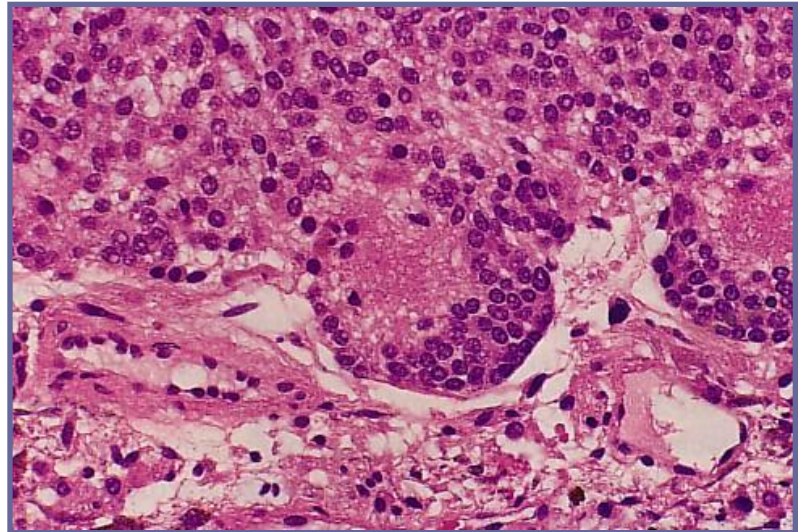
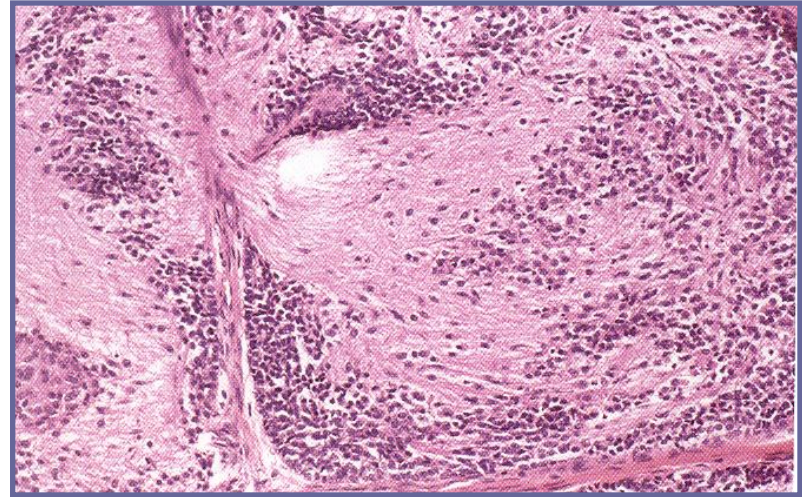
Sinonasal adenocarcinoma

- Adenoid cystic carcinoma
 - Cribriform pattern of tubular structures
- Non-salivary gland type sinonasal adenocarcinoma
 - Large glands lined by neoplastic epithelium



Olfactory Neuroblastoma (Esthesioneuroblastoma)

- Uncommon
 - Olfactory mucosa
 - 40 yr; M=F
 - Nasal stuffiness, epistaxis
-
- Microscopy: nests of small round cells in a fibrillary background



Nasopharynx

Nasopharyngeal Carcinoma

- M:F = 2.5 – 3: 1; average age = 50 yr.
- Bimodal age peak in undifferentiated variety:
 - 2nd decade and 6th decade
- Common in southeast China, Philippines, parts of Africa
- Low incidence in Western world
- Jamaica: 0.4/100,000 (females); 1.1/100,000 (males)

Nasopharyngeal Carcinoma

- Aetiology:

- **Viral:** Epstein-Barr Virus (EBV)

- Undifferentiated and non-keratinizing varieties
 - EBV genome found in the neoplastic cells

- **Hereditary:** HLA-A2, HLA-BW46

- **Environmental:** salted fish, herbal medicines

Nasopharyngeal Carcinoma

- Clinical presentation:
 - Cervical lymph node metastases with occult primary
 - 50 – 80% of patients with undifferentiated variety
 - Otitis media, hearing loss
 - Headache, cranial nerve deficits, epistaxis

Nasopharyngeal Carcinoma

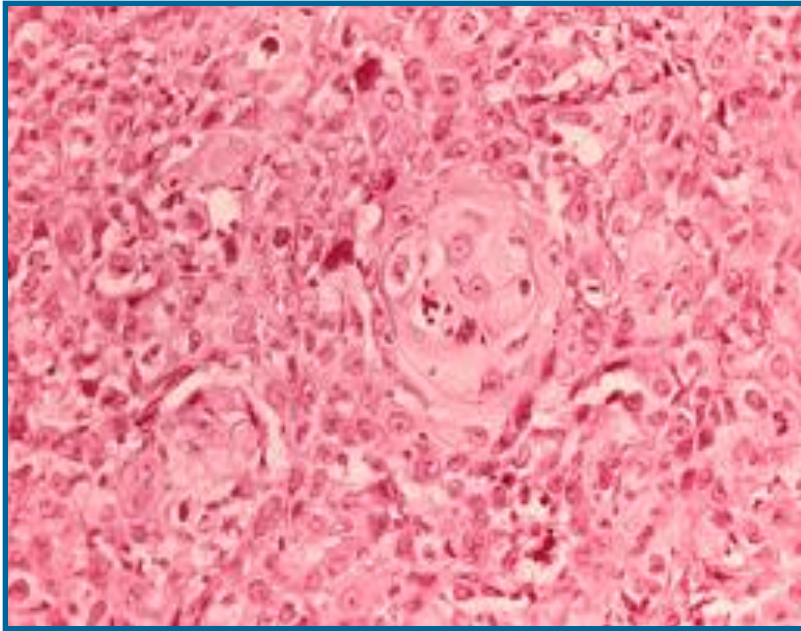
- Gross morphology:

- Normal nasopharynx or surface granularity or obvious mass

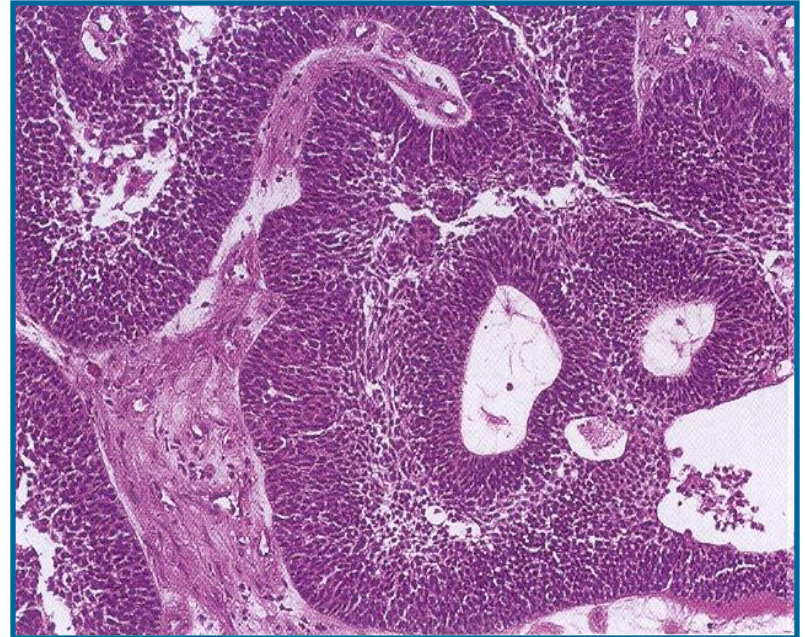
- Microscopy:

- Three varieties –
 - Keratinizing squamous cell carcinoma
 - Non-keratinizing squamous cell carcinoma
 - Undifferentiated carcinoma

Nasopharyngeal Carcinoma



Keratinizing squamous
cell carcinoma

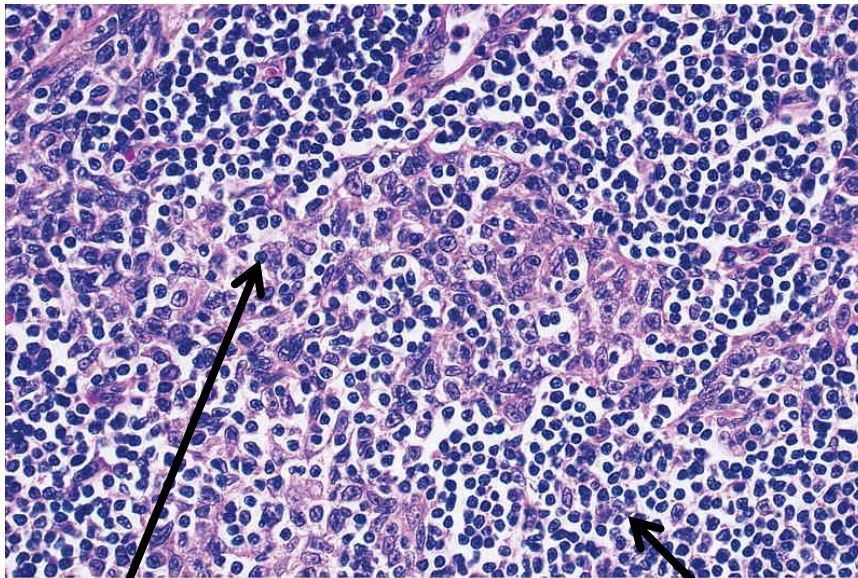


Nonkeratinizing
squamous cell carcinoma

Nasopharyngeal Carcinoma

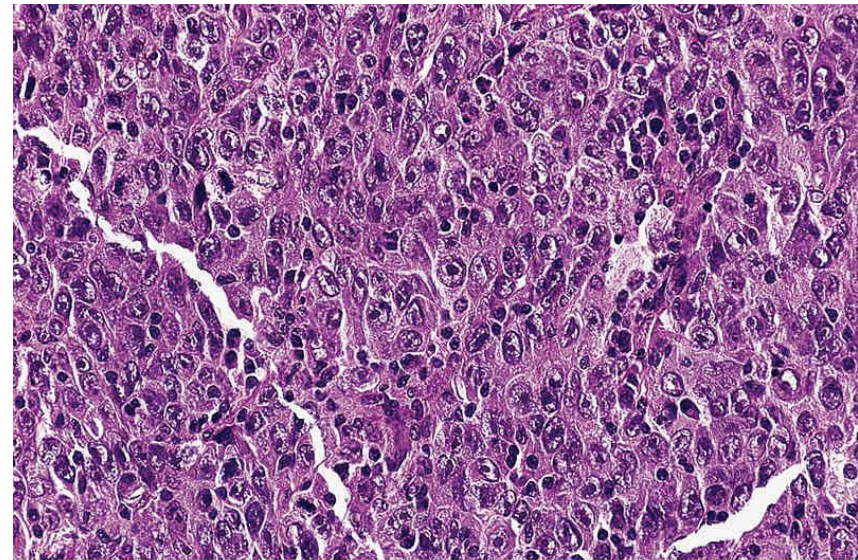
Undifferentiated carcinoma:

Large neoplastic epithelial cells admixed with **non-neoplastic** lymphoid cells



Nest of neoplastic
epithelial cells

Non-neoplastic
lymphoid cells



Diffuse (syncytial) arrangement



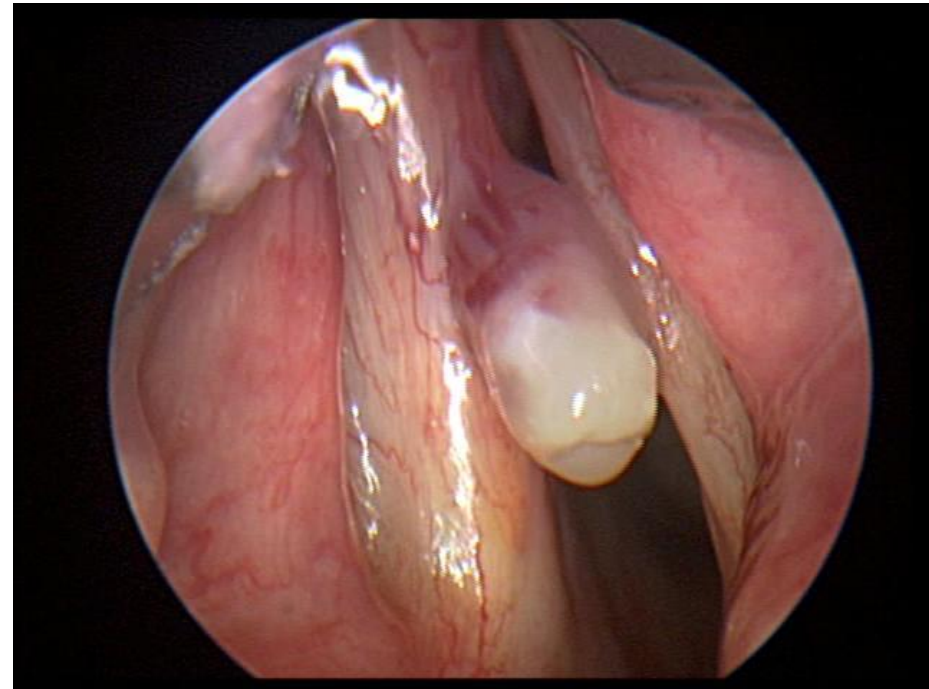
Larynx

Inflammation: Laryngitis

- **Infectious** (viral, bacterial), **allergic**, or **chemical**
- Usually part of generalized upper respiratory tract infection
- Heavy exposure to tobacco smoke

Inflammation: Laryngeal nodule

- Laryngeal nodule; singer's node; vocal cord polyp
- Heavy smokers, singers, teachers, preachers
- True vocal cords
- Persistent hoarseness
- Gross morphology: Smooth, rounded, few millimetres

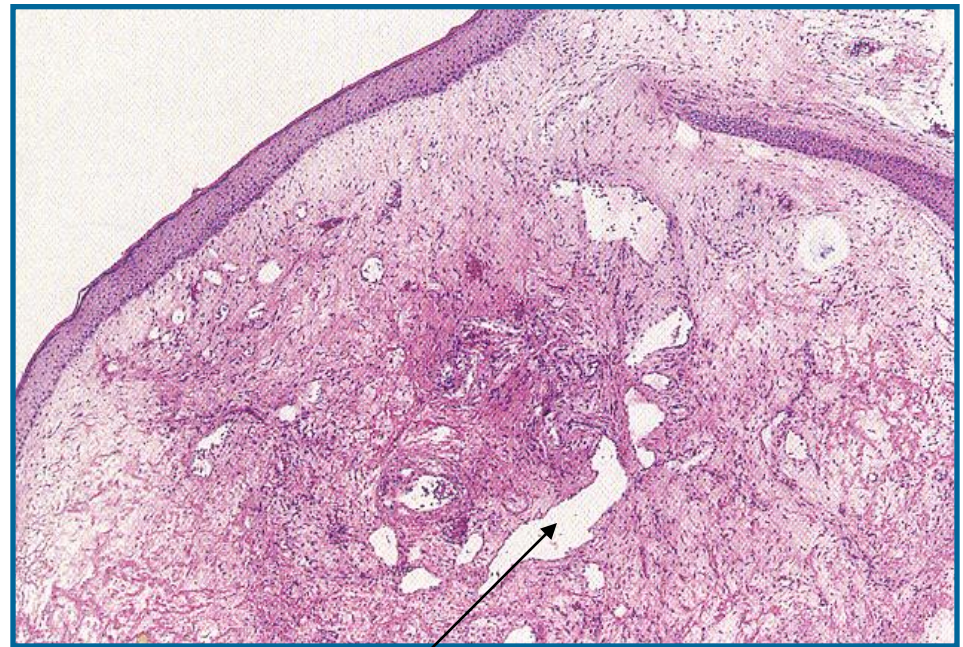


<http://www.ghorayeb.com/vocalcordpolyp.html>

Inflammation: Laryngeal nodule

MICROSCOPY:

- Hyperplastic, stratified squamous epithelium
- Loose myxoid stroma
- Stroma may have numerous (as shown here) or few vascular channels



Vascular channel

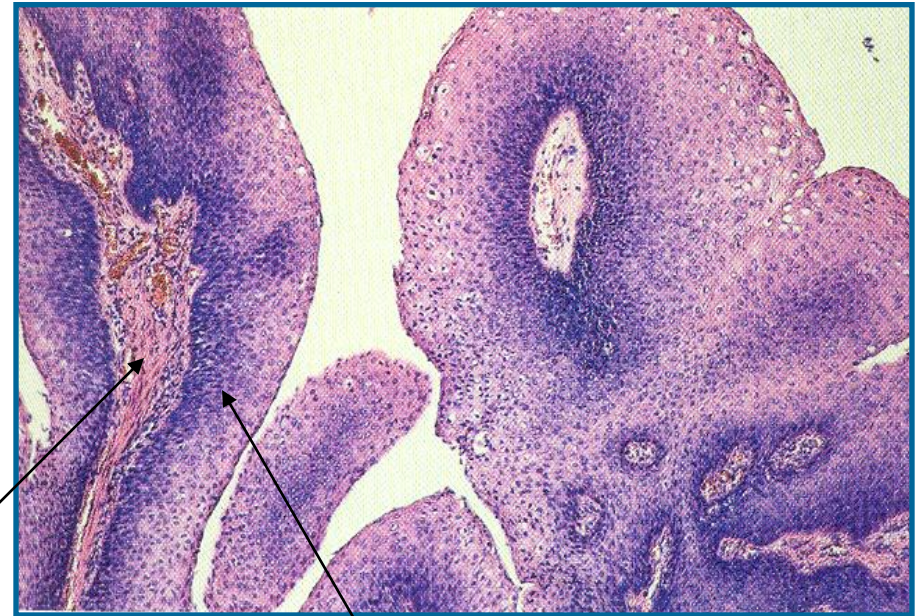
Benign Tumours: Laryngeal Papillomas

- Also called squamous papillomas
- Found on true vocal cords
- Usually **single** in adults
- Often **multiple** in children
- Gross morphology:
 - Soft, raspberry-like excrescences
 - Usually less than 1 cm in diameter

Benign Tumours: Laryngeal Papillomas

MICROSCOPY:

- Multiple, slender, finger-like projections
- Hyperplastic stratified squamous epithelium
- Cores of fibrovascular stroma



Fibrovascular stroma

Hyperplastic stratified
squamous epithelium

Juvenile Laryngeal Papillomatosis

- Multiple papillomas
- Human Papilloma Virus (HPV) types 6 and 11
- Frequently recur
- Often spontaneously regress at puberty
- Malignant transformation is **rare**

Malignant Tumours: Laryngeal Carcinoma

- 60 – 70 yr; M>F
- Jamaica: 4.7/100,000 (males); 0.2/100,000 (females)
- Tobacco smoke**, alcohol, asbestos, irradiation
- Hyperplasia – Dysplasia – Carcinoma sequence
- Clinical presentation depends on site of origin

Malignant Tumours: Laryngeal Carcinoma

TRANSGLOTTIC CANCERS

- Cross the ventricle vertically
- Involve both true vocal cord and ventricular band
- Associated with a fixed vocal cord
- Very invasive

SUPRAGLOTTIC CANCERS

- Epiglottis, ventricular band, aryepiglottic fold, arytenoid body
- Hoarseness only after becoming quite large
- Local or referred (to the ear) pain
- Late (advanced stage) presentation

GLOTTIC CANCERS

- True vocal cord
- Persistent hoarseness
- Early presentation

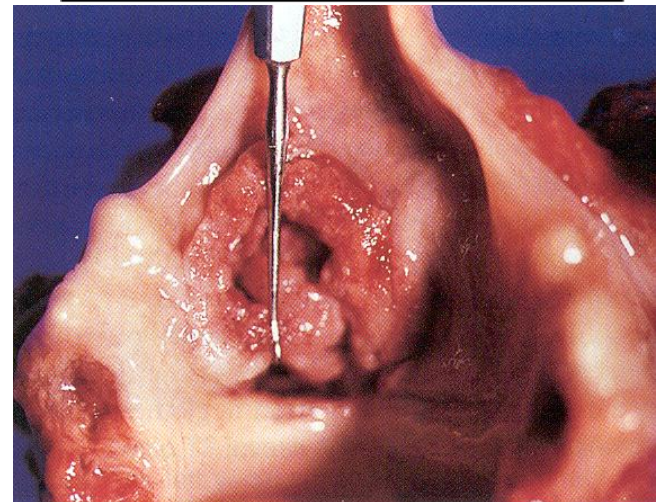
Malignant Tumours: Laryngeal Carcinoma

GROSS MORPHOLOGY:

- Polypoid, exophytic mass

OR

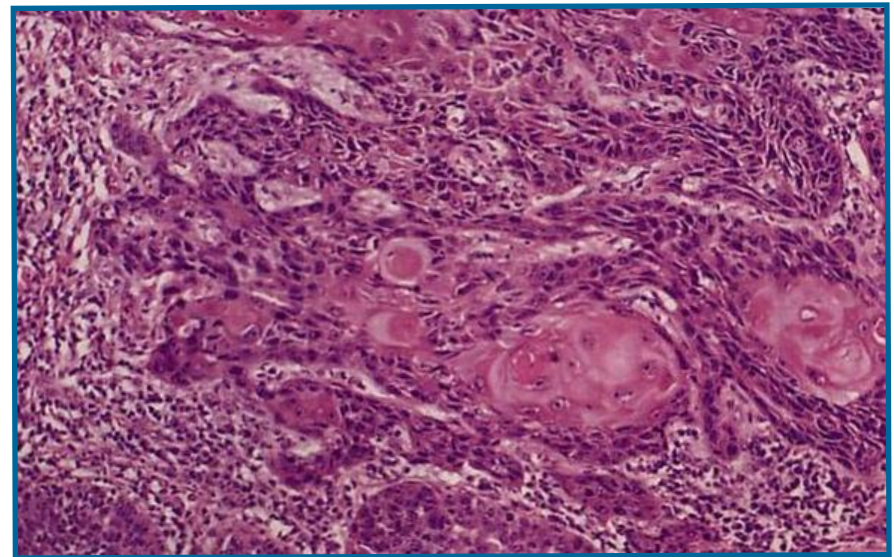
- Ulcerated mass



Malignant Tumours: Laryngeal Carcinoma

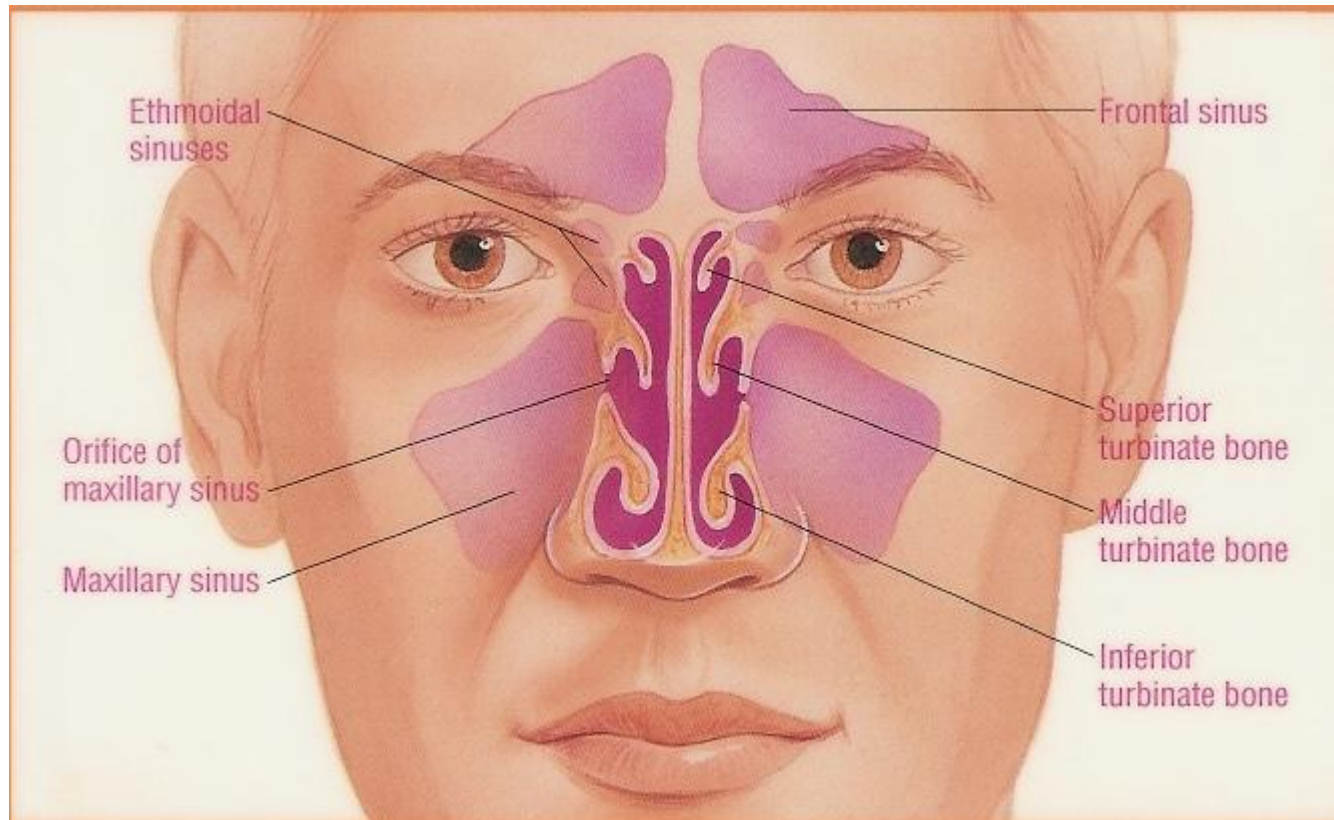
MICROSCOPY:

- 95% are squamous cell carcinomas
- Remainder are adenocarcinomas

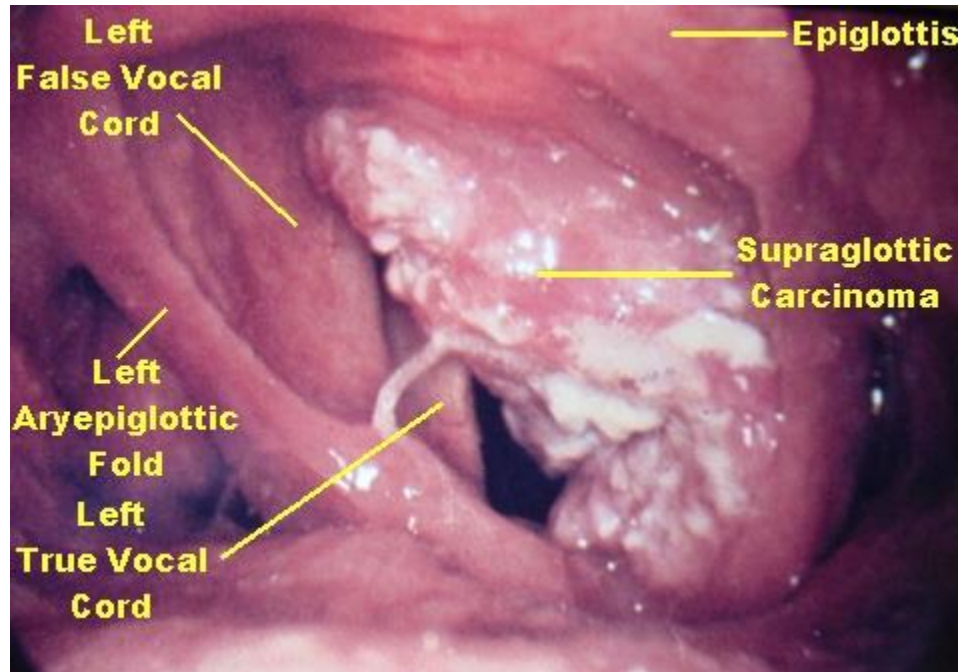


Malignant Tumours: Laryngeal Carcinoma

- Surgery, radiotherapy
- Approximately 33% of patients die
- Causes of death include:
 - Infection
 - Widespread metastases



<http://www.ghorayeb.com/anatomysinuses.html>



<http://www.ghorayeb.com/LarynxLesions.html>