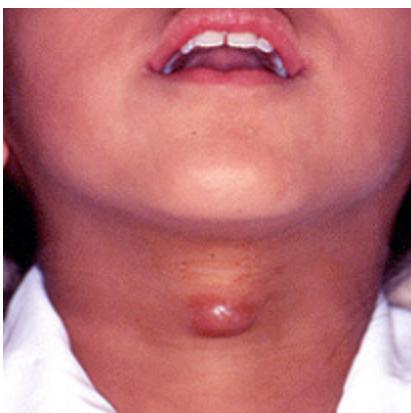
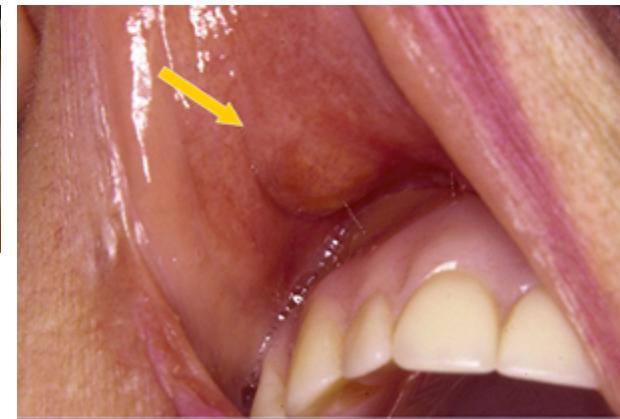


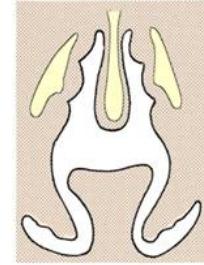
# DEVELOPMENTAL CYSTS

- Palatal cysts of the newborn,
- Nasolabial cyst,
- Nasopalatine duct cyst,
- Globulomaxillary cyst,
- Median palatal cyst,
- Median mandibular cyst,
- Epidermoid cyst of the skin,
- Dermoid cyst,
- Thyroglossal duct cyst,
- Branchial cleft cyst,
- Oral lymphoepithelial cyst

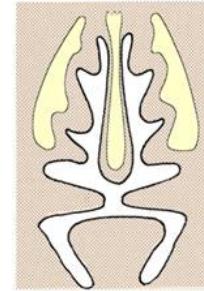


## DEVELOPMENTAL CYSTS:

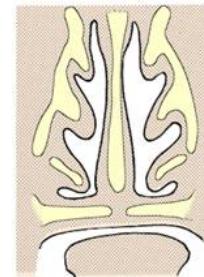
- A number of different developmental cysts of the head & neck region have been described historically as "fissural cysts" because they were thought to arise from epithelia entrapped along embryonal lines of fusion.
- The exact pathogenesis is still uncertain.



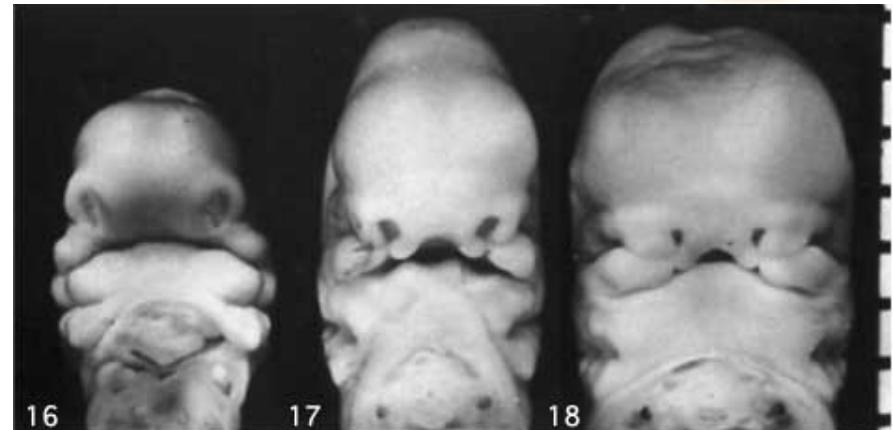
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B



C



# Palatal cyst of the newborn

**Synonyms:** Epstien's pearls; Bohn's nodule

Small developmental cyst on palate of newborn infants.

## Disease Mechanism:

It has been theorized that these "inclusion" cysts may arise in one of two ways:

**First:** As the palatal shelves meet & fuse in the midline to form secondary palate, small epithelia may become entrapped below the surface along anterior part of median palatal raphe & form cyst **{Epstien's pearls}**.

**Second:** These cysts arise from epithelial remnants derived from the development of the minor salivary gland of palate **{Bohn's nodules}** which is present scattered over hard palate & near soft palate.



## **Clinical Features:**

Neonates: 55-85%

Cyst is small 1-3mm, white or yellowish white papules, frequently, a cluster of 206 cysts are observed.

## **Histological Features:**

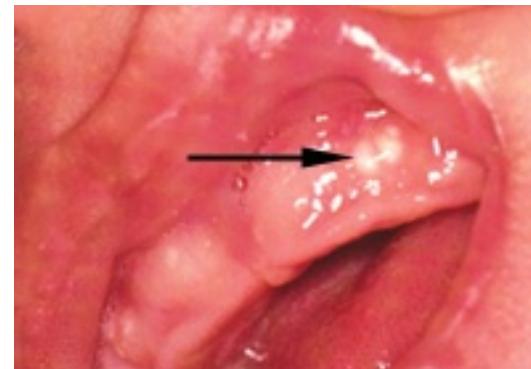
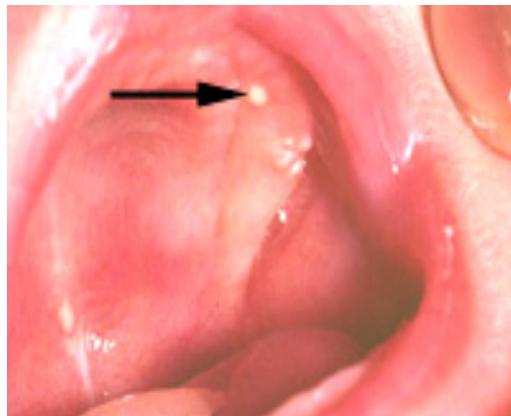
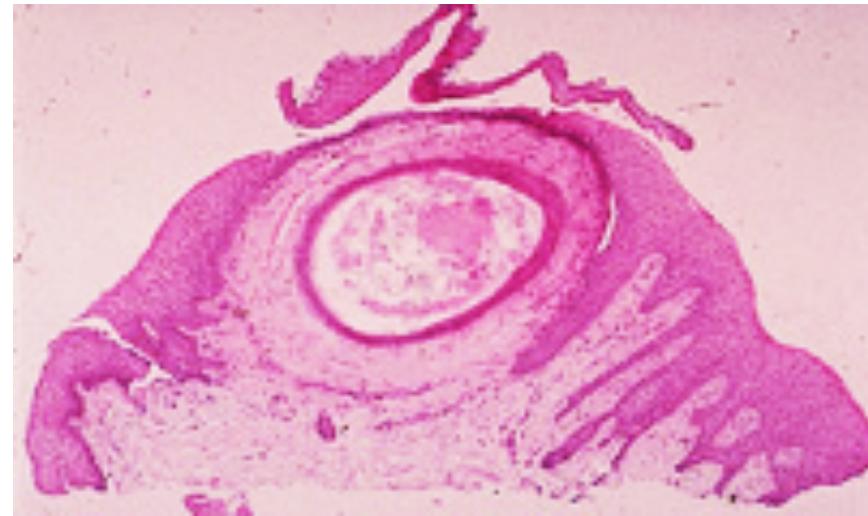
Keratin-filled cyst that are lined by stratified squamous epithelium

## **Management:**

**No treatment is required.**

Self Healing within several weeks

Covering epith. Degenerates, the cyst rupture onto mucosal surface & eliminate their keratin contents.



# Nasolabial cyst

**Synonym:** Nasoalveolar cyst, Klestadt cyst:

Rare developmental cyst that occur in the upper lip lateral to the midline.

**Disease mechanism:**

Pathogenesis is uncertain, although there are 2 theories:

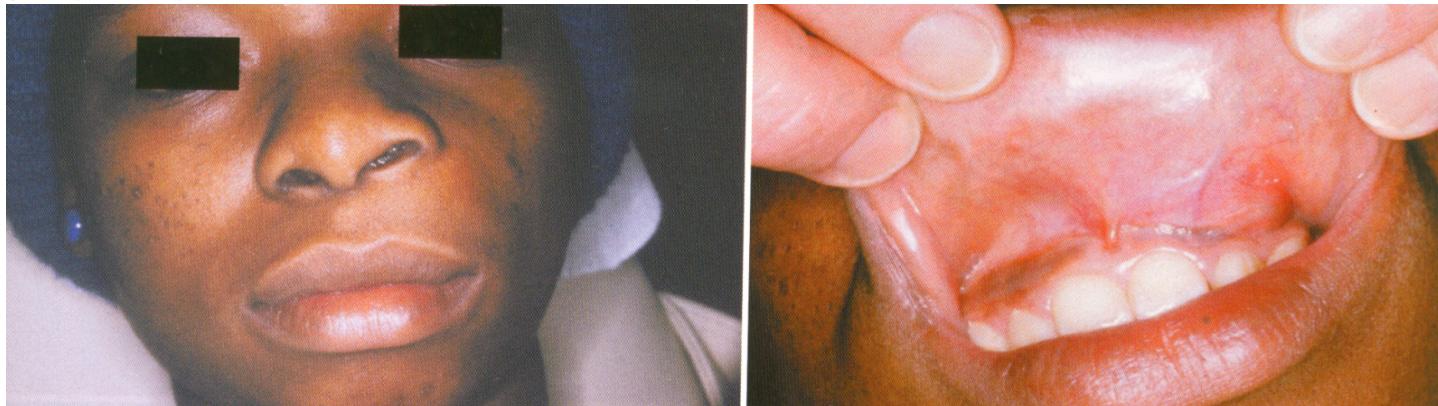
**First:** Considered as "fissural" cyst arise from epithelial remnant entrapped along the line of fusion of maxillary, medial & lateral nasal processes.

**Second:** It develops from misplaced epithelia of the nasolacrimal duct because of their similar location & histology.

**Clinical Features:** Swelling of the upper lip lateral to the midline, resulting in elevation of the ala of the nose. Sometimes this elevation result in nasal obstruction.

Adults in 4th. & 5th decades are commonly affected with female predominance (3:1).

**No radiographic picture** is seen for this cyst, since it is in the soft tissue.



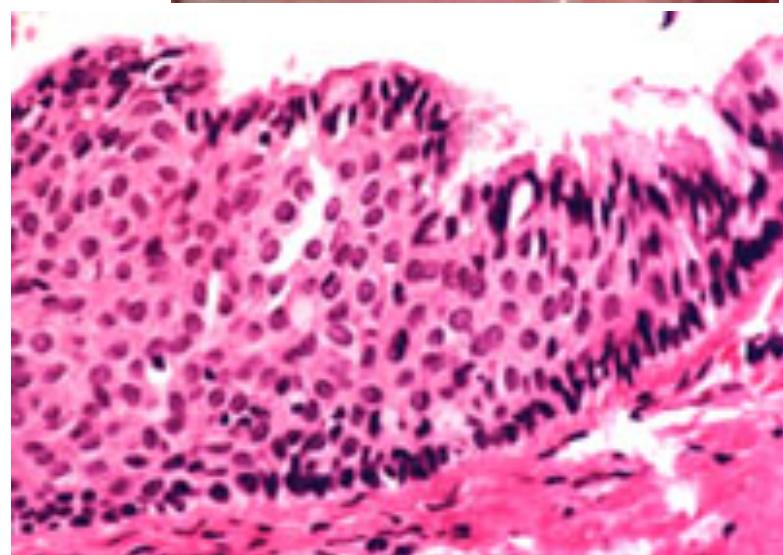
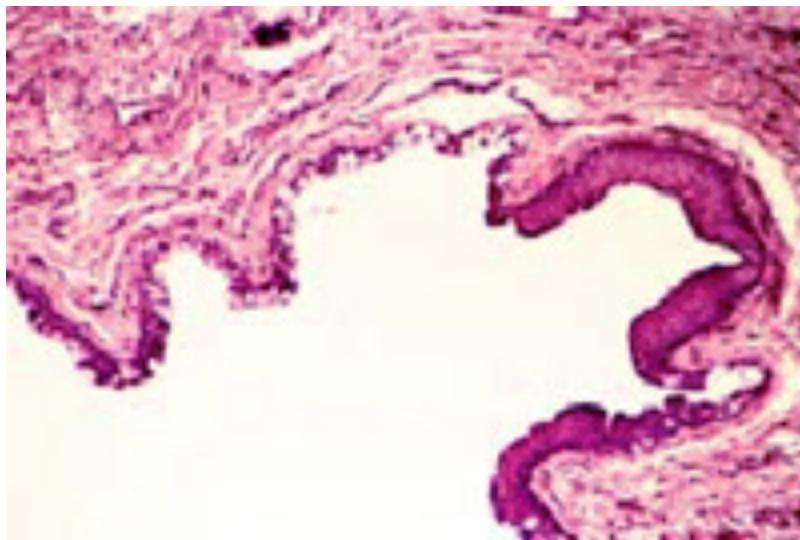
## *Histological Features:*

- Cyst lining is composed of pseudostratified columnar ciliated epith. With goblet cells.
- Areas of cuboidal epith. & squamous metaplasia.
- Fibrous CT wall.



## *Treatment & Prognosis:*

- IO surgical excision
- Endoscopic Marsupialization
- Rare recurrence



# Globulomaxillary cyst:

It is previously considered as "fissural" cyst result from entrapment of epithelia during fusion of globular portion of medial nasal process with maxillary process.

This concept has been questioned since epithelial entrapment should not occur during embryonic development of this area because these two processes are primarily united.

## Disease Mechanism:

Current theory suggest that all cysts that develop in "globulomaxillary" area are actually of odontogenic origin. (PA, OKC or LPC)

**Clinical Feature:** It develops between maxillary lateral incisor & cuspid teeth

**Radiographic Features:** Well-circumscribed unilocular radiolucency as an inverted pear between & apical to the teeth.

**Histological Features:** Cyst lining is of stratified squamous epith. like periapical cyst, sometimes cyst lined by pseudostratified ciliated columnar epith.

**Management:** Enucleation



# Nasopalatine duct cyst

## Synonym: Incisive canal cyst

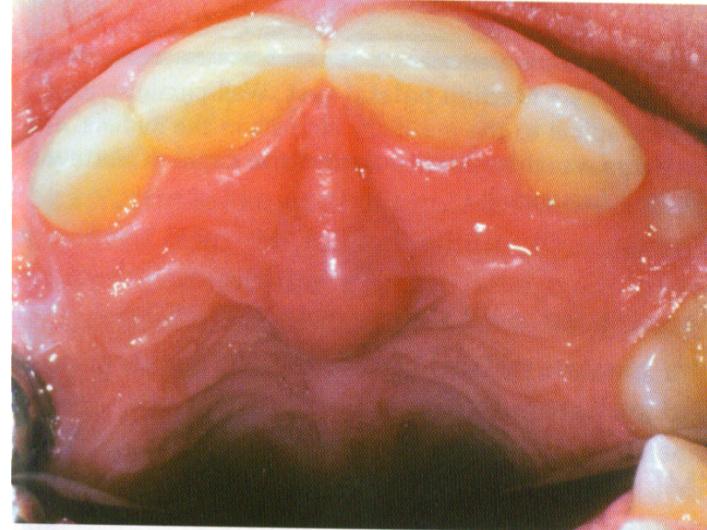
- Most common non-odontogenic cyst of oral cavity which involve 10% of Jaw cysts.

## Disease mechanism:

- It arise from remnant of nasopalatine duct ( an embryonic structure connecting the oral & nasal cavities in the area of incisive canal).
- The incisive canal begins on the floor of the nasal cavity on either side of the nasal septum, coursing downward & forward to exit the palatal bone via common foramen in the area of incisive papilla.
- Trauma or infection of the duct & mucous retention of adjacent minor salivary gland have been mentioned as possible etiologic factors.
- The lesion most likely represents a spontaneous cystic degeneration of remnant of nasopalatine duct.

## Clinical Features:

- Swelling of the anterior palate, drainage & pain  
Three times higher incidence in males.
- Most of them are asymptomatic



## **Radiographical Features:**

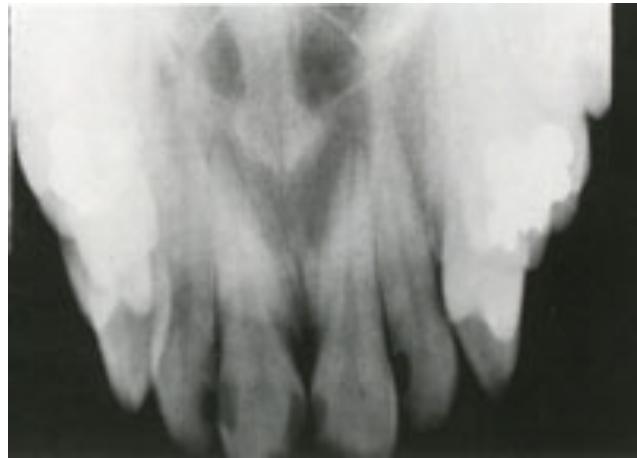
Well-circumscribed radiolucency (round or oval) with sclerotic borders in or near the midline of the anterior maxilla between & apical to the central incisors.

It may be difficult to distinguish a small nasopalatine duct cyst from a large incisive foramen.

It is generally accepted that a thickness of 6mm. is the upper limit of normal size for incisive foramen.

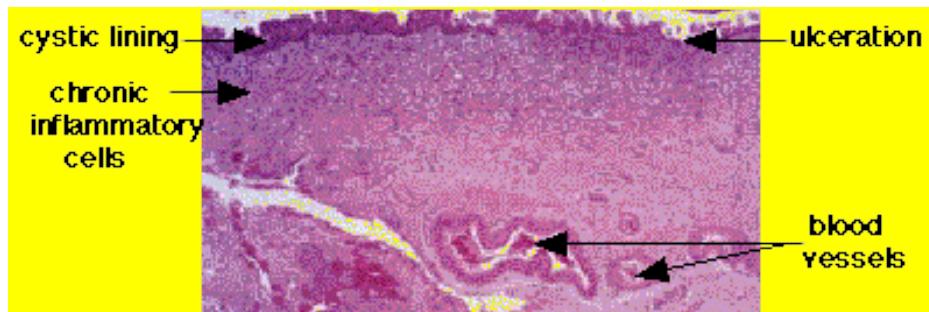
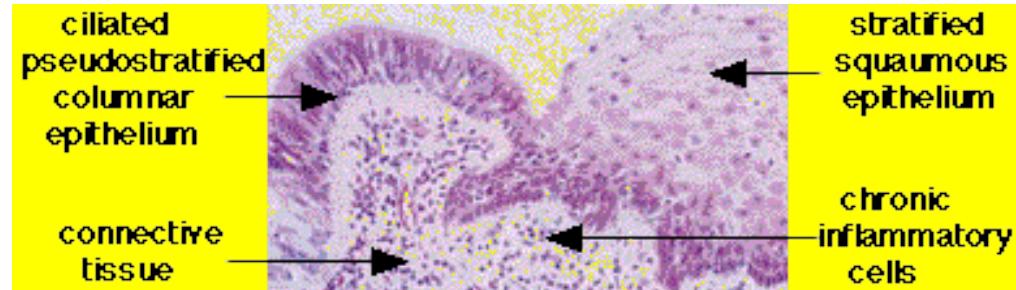
Therefore, a radiolucency that is 6mm. or smaller in size in this area is usually considered a normal foramen, unless other clinical signs & symptoms are present.

In rare cases , nasopalatine duct cyst may develop in soft tissue of incisive papilla without bony involvement [Cyst of incisive papilla] which demonstrates bluish discoloration as a result of fluid contents in the cyst lumen.



## Histological Features:

- Cyst lining is of stratified squamous epith., some cysts in this location may be classified as **odontogenic keratocyst or developmental periodontal cyst**.
- The type of epithelium may be related to the vertical position of the cyst within the incisive canal.
- Cyst developing within the superior aspect of the canal near nasal cavity often demonstrates respiratory epith.
- Those cysts in the inferior portion near the oral cavity exhibits squamous epith.
- The content of the cyst wall can be helpful diagnostic aid, because nasopalatine duct cyst arises with incisive canal, moderate size nerves, small muscular arteries & veins are usually found in the wall of the cyst. Small mucous gland have been reported.



## Treatment & Prognosis

Surgical enucleation with biopsy

# Median palatal cyst:

## Disease Mechanism:

Rare fissural cyst that theoretically develop from epithelia entrapped along the embryonic line of fusion of the lateral palatine shelves of maxilla.

This cyst may be difficult to distinguish from nasopalatine duct cyst, since most median palatal cysts may represent posteriorly positioned naso-palatine duct cyst.

**Clinical Features:** Asymptomatic fluctuant swelling of the midline of the hard palate posterior to the palatine papilla, 2X2cm. in size.

**Radiographical Features:** Well-circumscribed radiolucency in the midline of the hard palate.

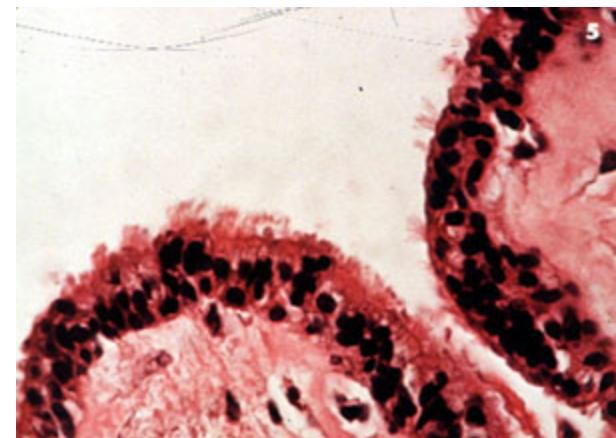
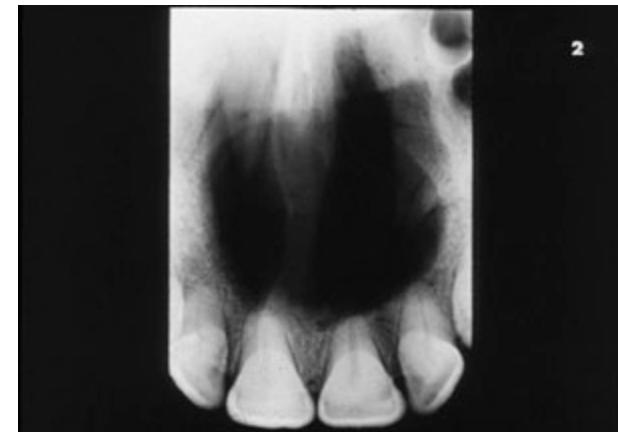
It must be stated that a true median palatal cyst should present with clinical enlargement of the palate.

A midline radiolucency without clinical evidence of expansion is probably a nasopalatine duct cyst.

**Histological Features:** Cyst lined by stratified squamous epith., areas of pseudo stratified columnar epith. have been reported in some cases.

## Treatment & Prognosis:

Surgical Removal with no recurrence.



**To differentiate the median palatal cyst from other cystic lesion of the maxilla:**

1. Symmetrical along the midline.
2. Ovoid or circular.
3. Located posterior to palatine papilla.
4. Not associated with non-vital teeth.
5. No microscopic evidence of large NV bundles, hyaline cartilage or minor salivary glands in the wall of the cyst.

# Median Mandibular cyst:

It is a controversial lesion of questionable existence.

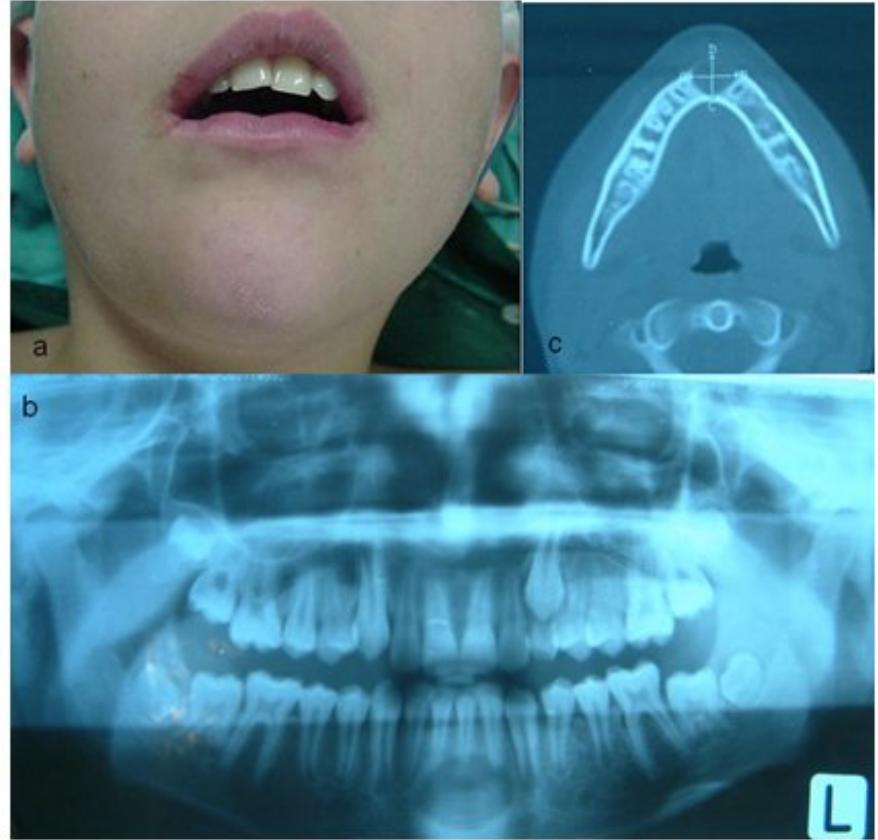
## Disease mechanism:

Theoretically, it represents a " fissural" cyst in the anterior midline of the mandible that develop from epithelia entrapped during fusion of the two halves of the mandible during embryo life.

However, the mandible is actually develops as a single bi-lobed proliferation of mesenchyme with a central isthmus in the midline which is eliminated as mandible develop.

Therefore, because no fusion of epithelium-lined processes occurs, entrapment of epithelia should not be possible.

For this reason it appears likely that most, if not all, of these midline cysts are of *odontogenic origin*.



## *Radiographical Features:*

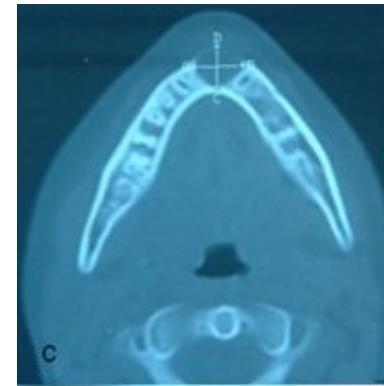
- Midline radiolucency between & apical to the mandibular central incisors with cortical expansion.

## *Histological features:*

Cyst lined by stratified squamous epith.

Some cysts in this location may be classified as **odontogenic keratocyst** or **developmental lateral periodontal cyst** or **GOC**.

*The term MMC should no longer be used.*

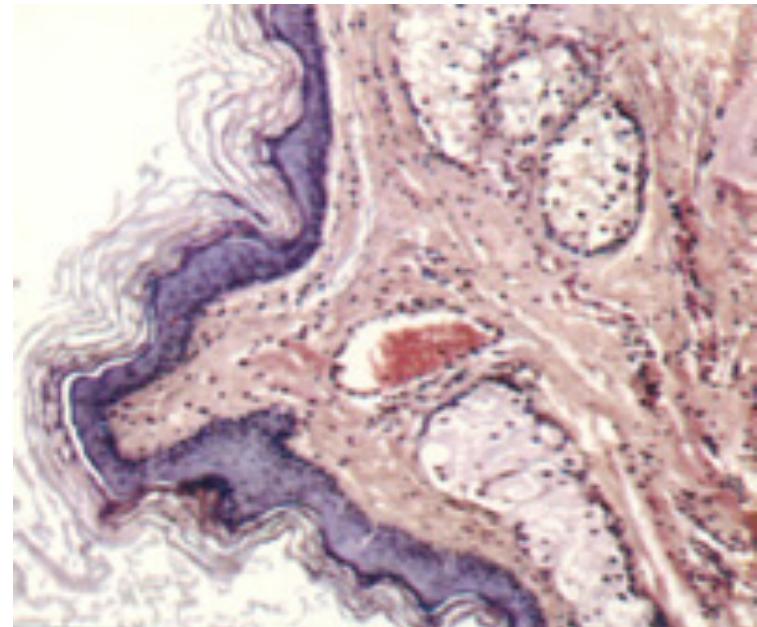


## **Oral Epidermoid cyst :**

Uncommon developmental cystic malformation

### **Clinical Features:**

It present as nodular, fluctuant, submucosal lesion that may or may no be associated with inflammation.



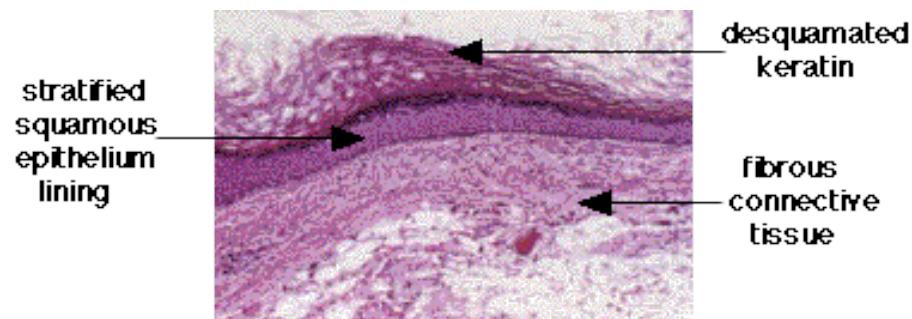
### **Histological Features:**

Cyst lined by stratified squamous epith.

Resemble epidermis.

A well-developed granular cell layer is seen.

Lumen is filled with degenerating orthokeratin.



## **Dermoid cyst:**

It is generally classified as a benign cystic form of teratoma.

The cyst is lined by epidermis-like epithelium with no dermal appendages in the cyst wall.

### **Clinical features:**

It occurs in the midline of mouth region & represents the minimal manifestation of Teratoma/Dermoid cyst/Epidermoid cyst spectrum.

It may develop above the genohyoid muscle (sublingual swelling).

Or below genohyoid muscle (submental swelling)

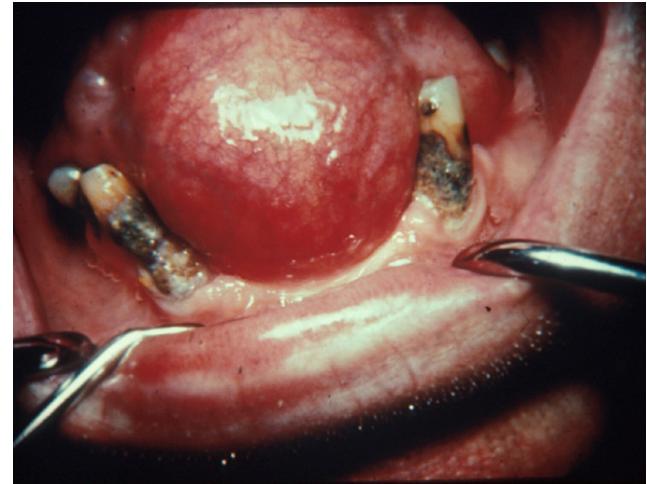
### **Teratoid cyst:**

Cystic form that contains:

1. Skin appendages.
2. CT elements (Muscle, BV & bones)
3. Endodermal structures (GIT epith cyst lining)

### **Treatment:**

Surgical Removal



# *Thyroglossal duct cyst:*

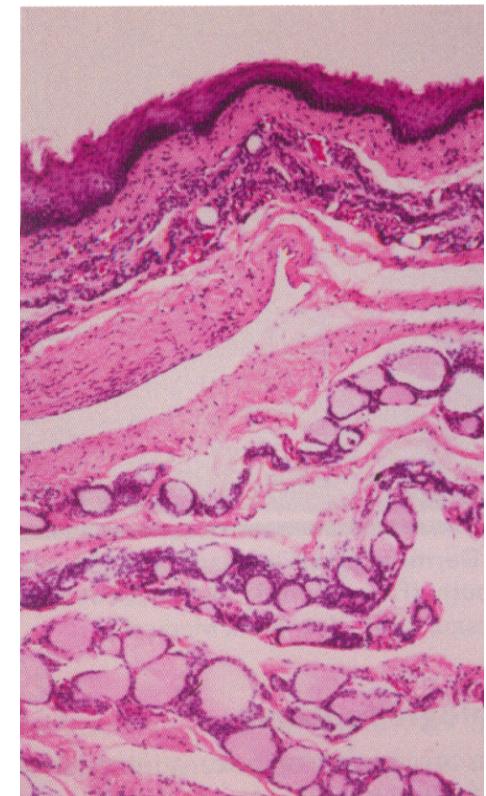
## *Disease mechanism:*

-Thyroid gland begins its development at the end of third week of embryo life as a proliferation of Endodermal cells from the ventral floor of the pharynx between the tuberculum impar & copula of the developing tongue ( a point that later becomes foramen cecum).

This thyroid anlage descends into the neck to its final location.

Along this path of descent, an epithelial tract or duct is formed, maintaining an attachment to the base of the tongue.

These thyroglossal duct epithelia undergoes atrophy & is obliterated. However, remnants of this epith. May persist & give rise to cysts along this tract known as thyroglossal duct cyst.



**Clinical Features:** It develops in the midline & may occur anywhere from the foramen cecum area of the tongue to the substernal notch.

In 60-80% of cases, cysts develop below hyoid bone.

Commonly diagnosed in the first two decades of life.

It presents as painless, fluctuant movable swelling unless secondary infected, the size is 3-10 cm.

It moves vertically during swallowing or protrusion of the tongue.

Fistulous tracts to the skin or mucosa develop in many cases.

**Histological Features:** Cyst lined by columnar or stratified squamous epithelium.

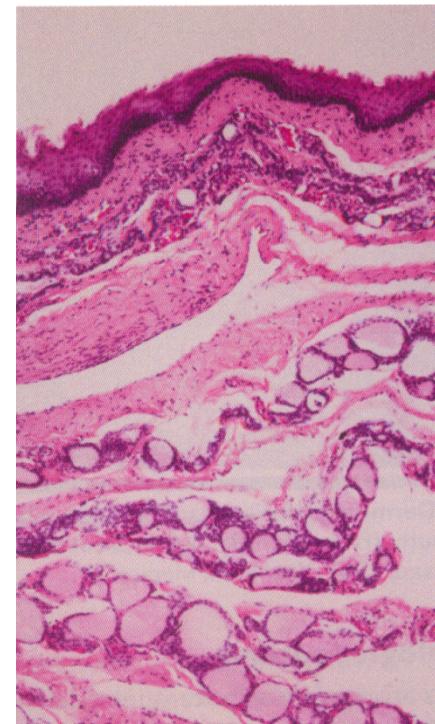
Thyroid tissue may occur in cyst wall.

**Treatment & prognosis:**

Siistrunk procedure

**Recurrence rate:** 10%

**Carcinoma :** 1-2% of cases



## Cervical Lymphoepithelial cyst

**Synonym:** Branchial cleft cyst

### Disease mechanism:

Developmental cyst of the lateral neck.

**It may develop** from remnant of the 2<sup>nd</sup> branchial clefts during 4<sup>th</sup> week of gestation.

**Or may arise** from cystic changes in parotid gland epith. That become entrapped in the upper cervical lymph node during embryo life.

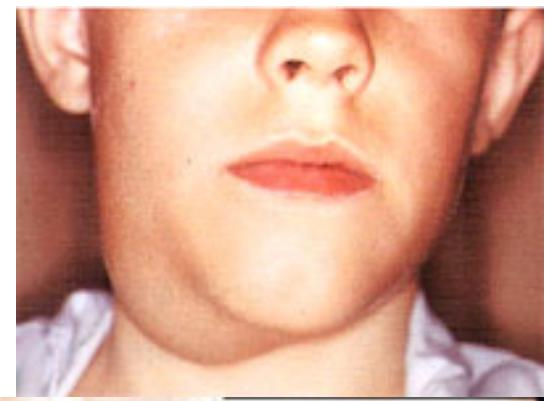
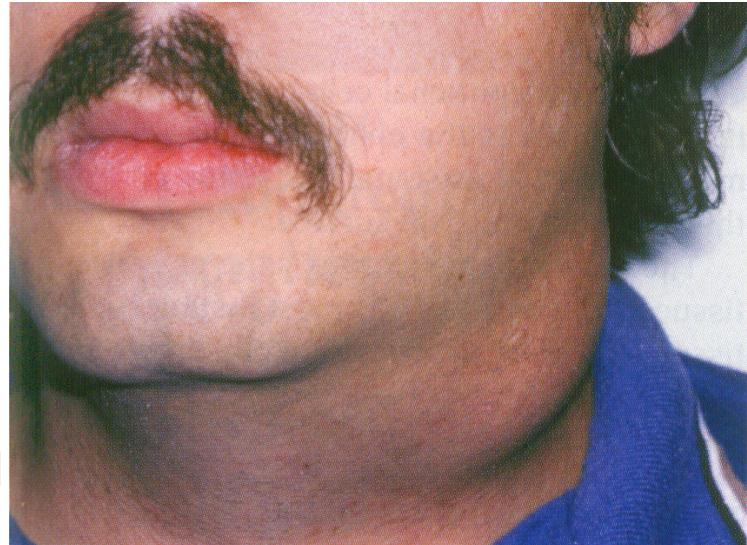
### Clinical Features:

-It occurs in the upper lateral neck along the anterior border of the sternocleidomastoid muscle.

Mostly affect young adult (20-40 years).

It appear as soft, fluctuant mass of 1-10cm. in diameter.

- Some appears as sinuses or fistula with mucoid discharge onto skin.



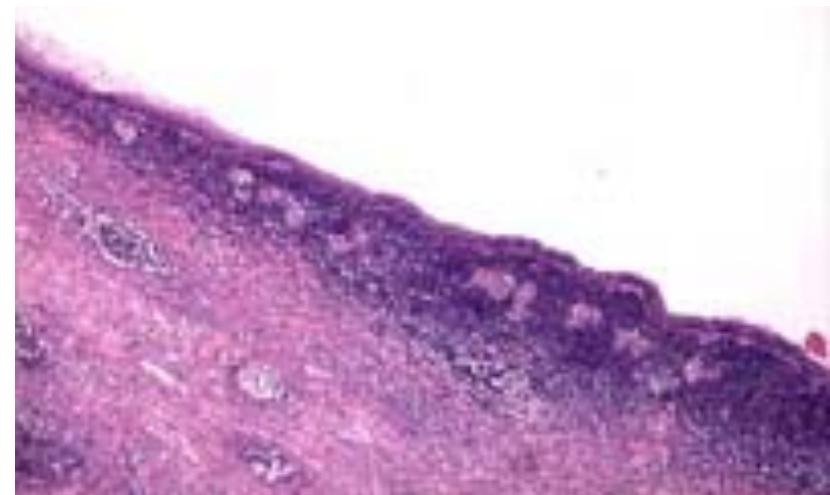
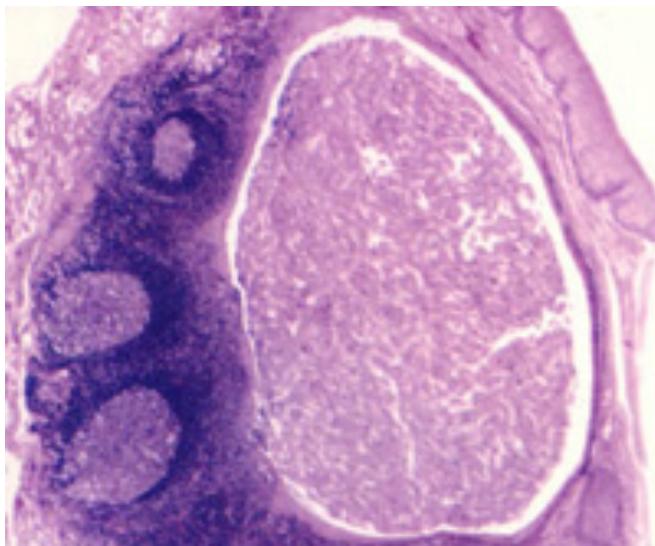
## Histological Features:

**Cyst lining** : stratified squamous epith. Which may be keratinized or non-keratinized.

**Cyst wall**: lymphoid tissue with germinal center formation.

## Treatment & Prognosis:

Surgical Removal



## **Oral Lymphoepithelial cyst :**

Uncommon lesion of the mouth that develop within oral lymphoid tissue.

It is microscopically similar to cervical lympho epithelial cyst, but much smaller in size.

### ***Clinical Features:***

Small sub mucosal mass that is usually 1cm. in diameter.

Cyst may feel firm or soft in palpation & the overlying mucosa is smooth & non-ulcerated.

The lesion is white or yellow & often contains creamy or cheesy keratinaceous materials in the lumen.

It is asymptomatic & affect the floor of the mouth of young age individuals.

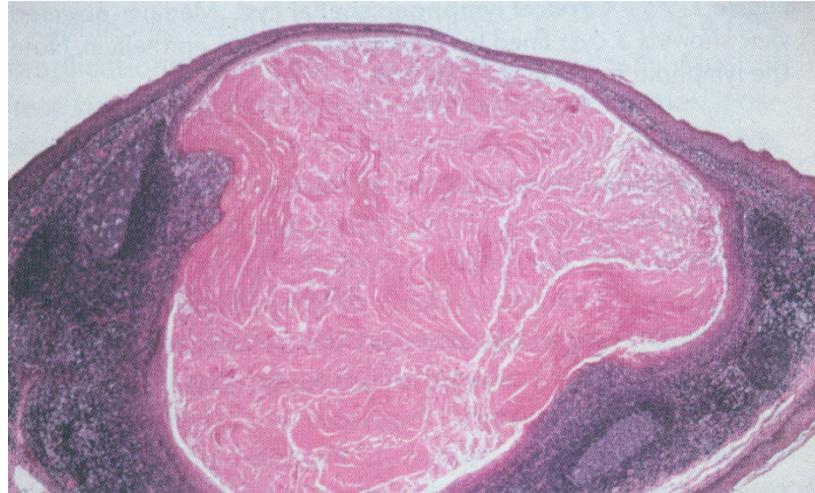
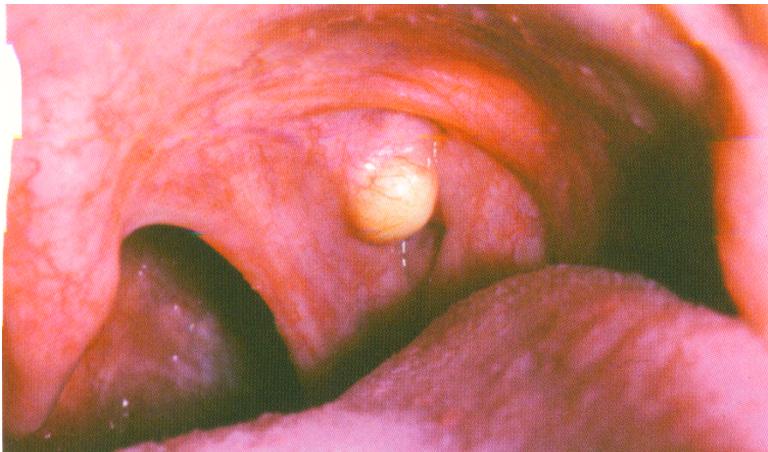
### ***Histological Features:***

Cyst cavity lined by parakeratinized stratified squamous epith. Without rete ridges,  
Cyst lumen is filled with desquamated squamous epith.

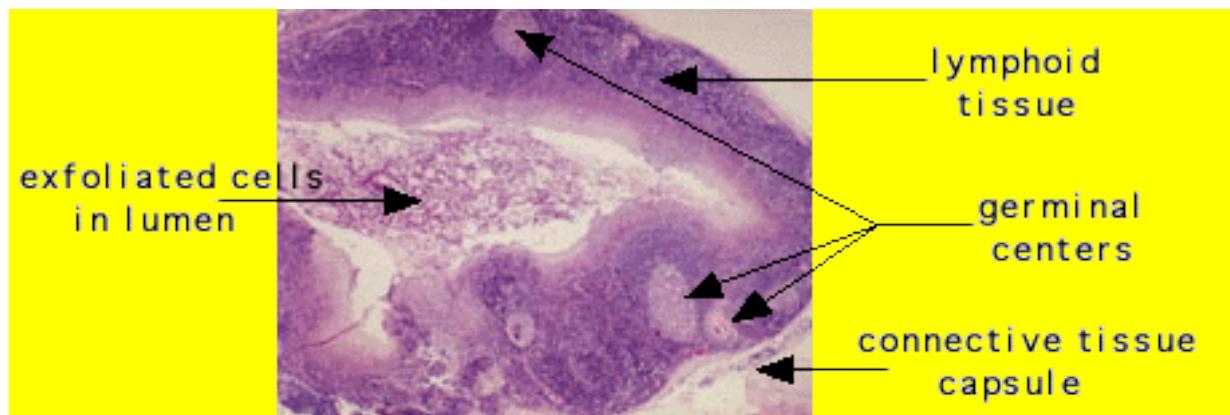
The most striking feature is the presence of lymphoid tissue in the cyst wall with **germinal center formation**.

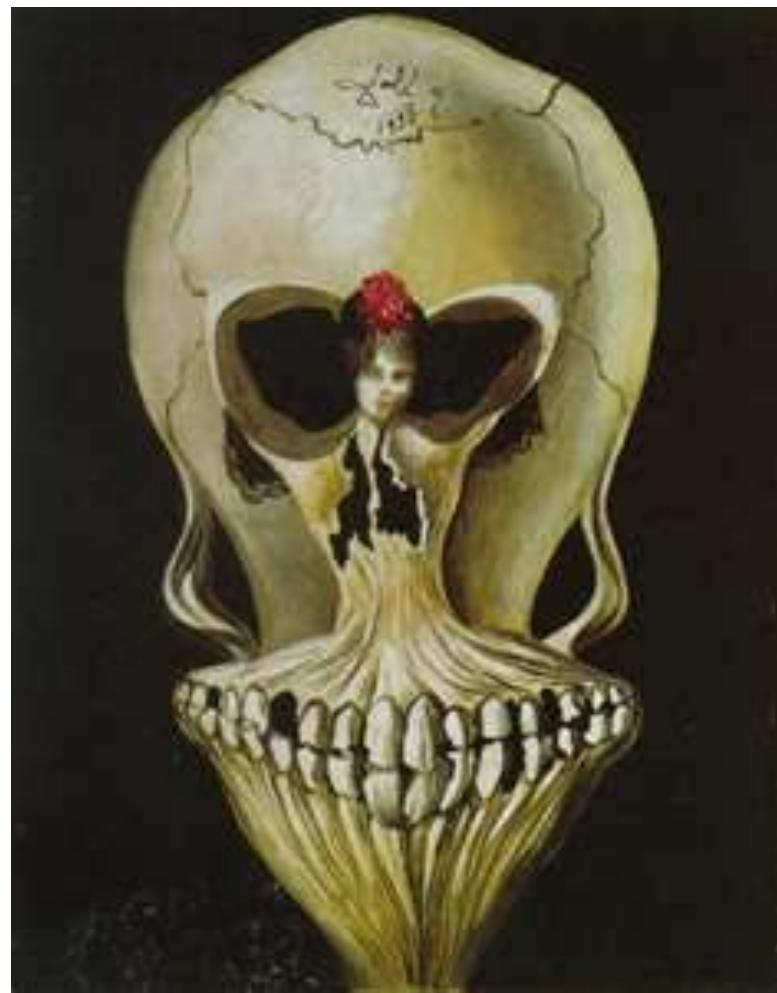
### ***Treatment:***

Surgical excision



# Oral Lymphoepithelial cyst :





Dr. Natheer Al-Rawi