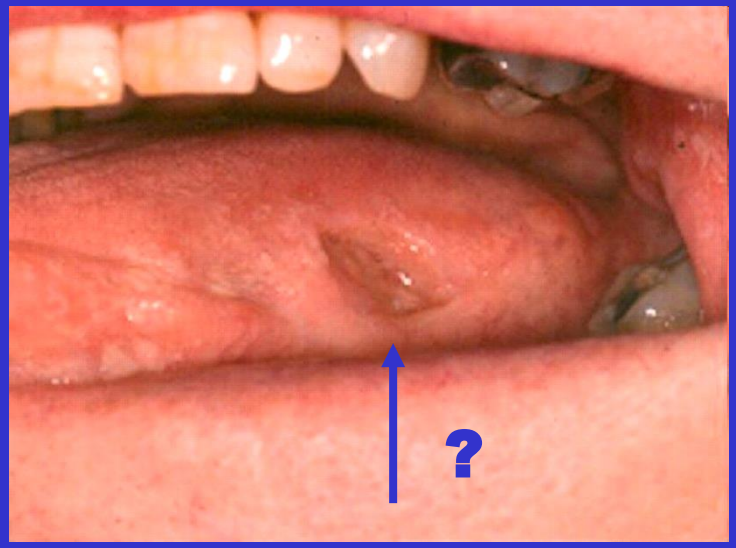
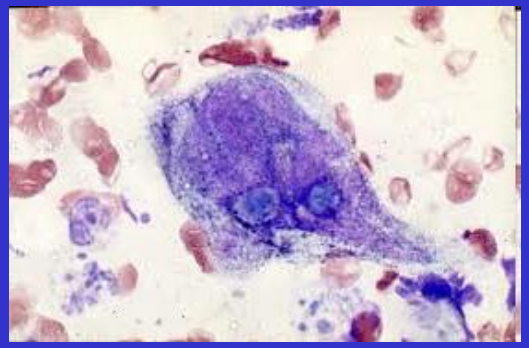
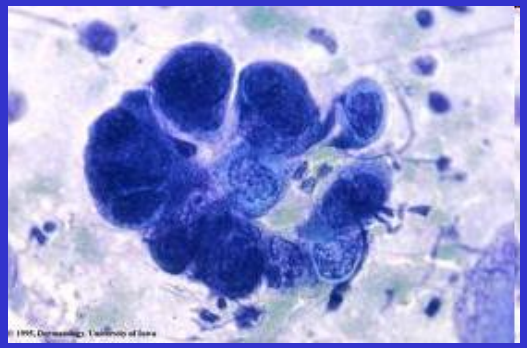
ORAL PATHOLOGICAL SAMPLING AND PROCESSING

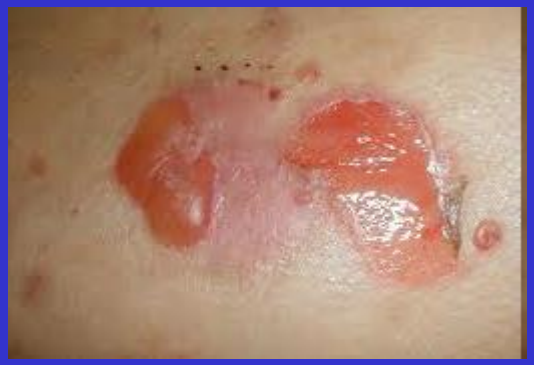
ATTILA ZALATNAI

Cytology



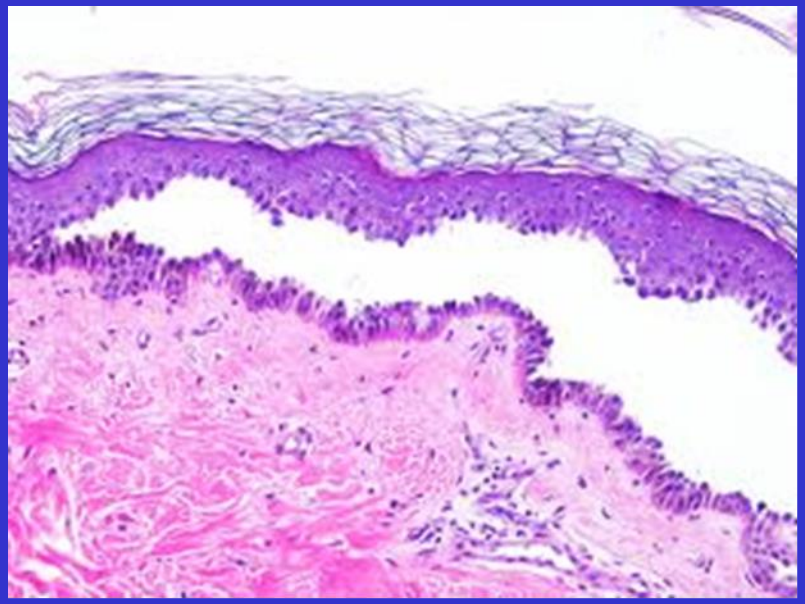


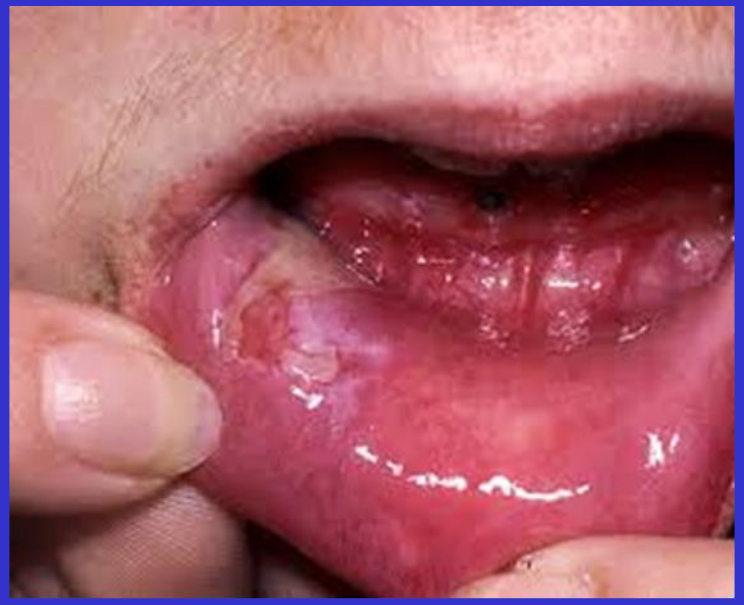


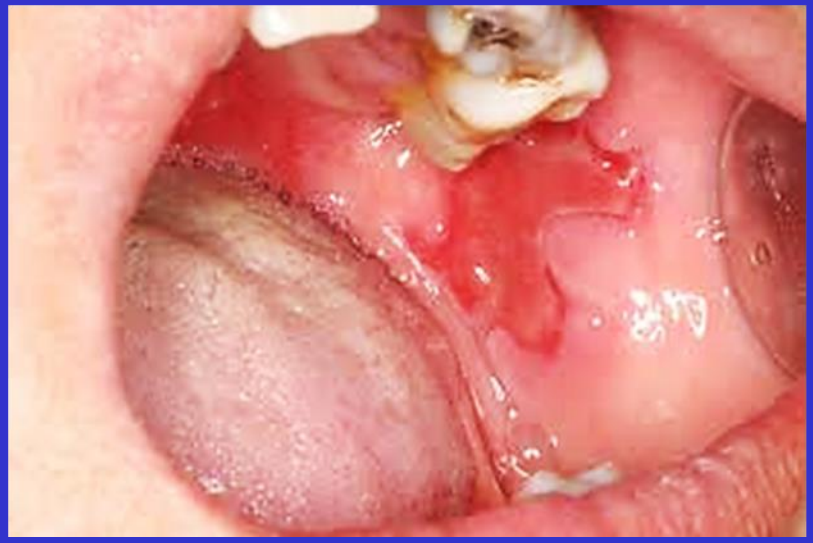


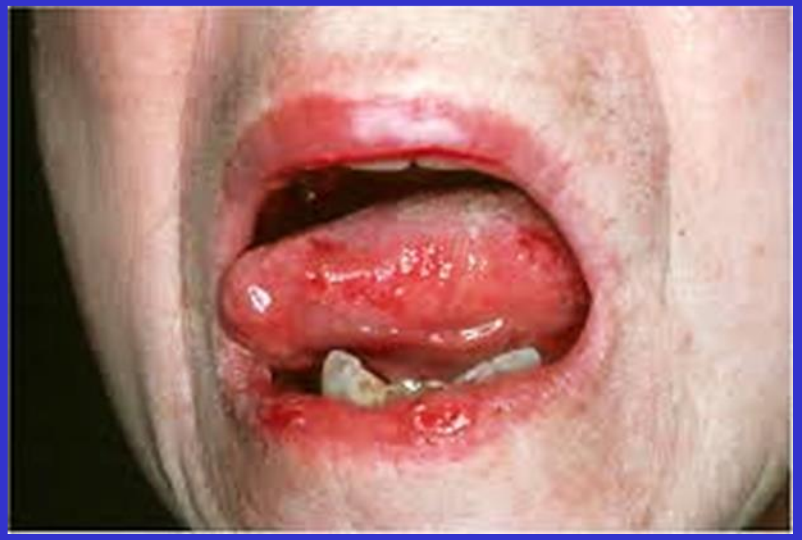
Tzank-cells

pemphigus

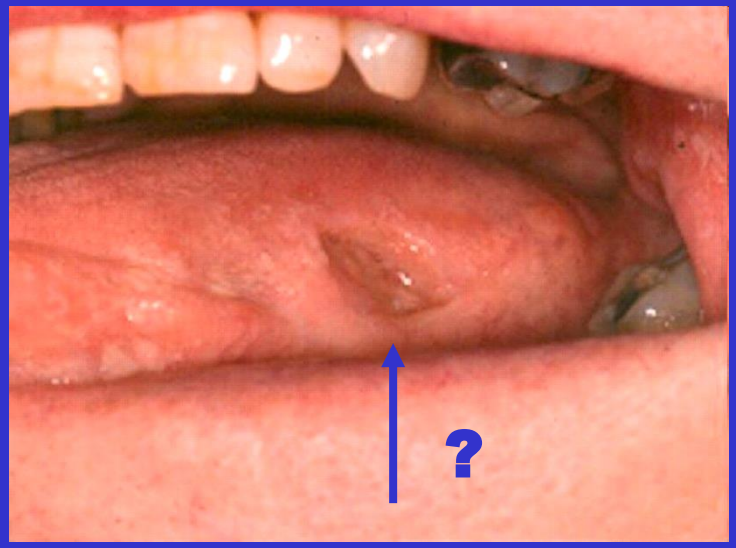


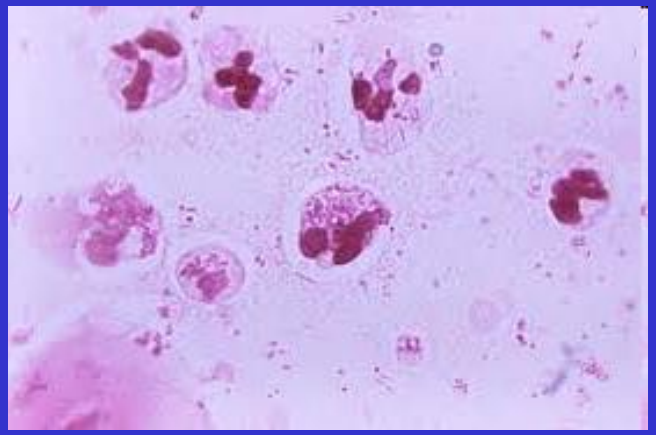




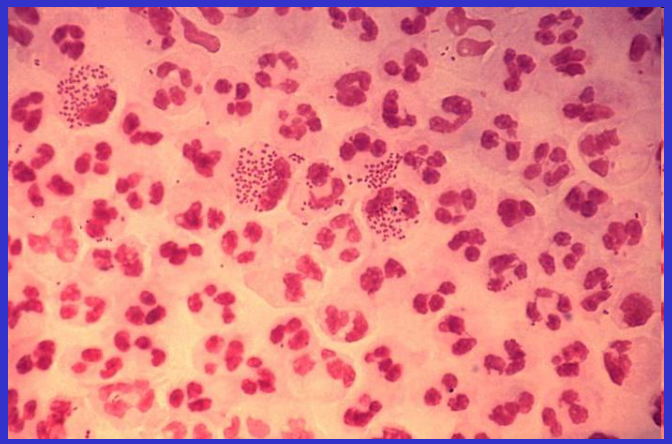


Cytology



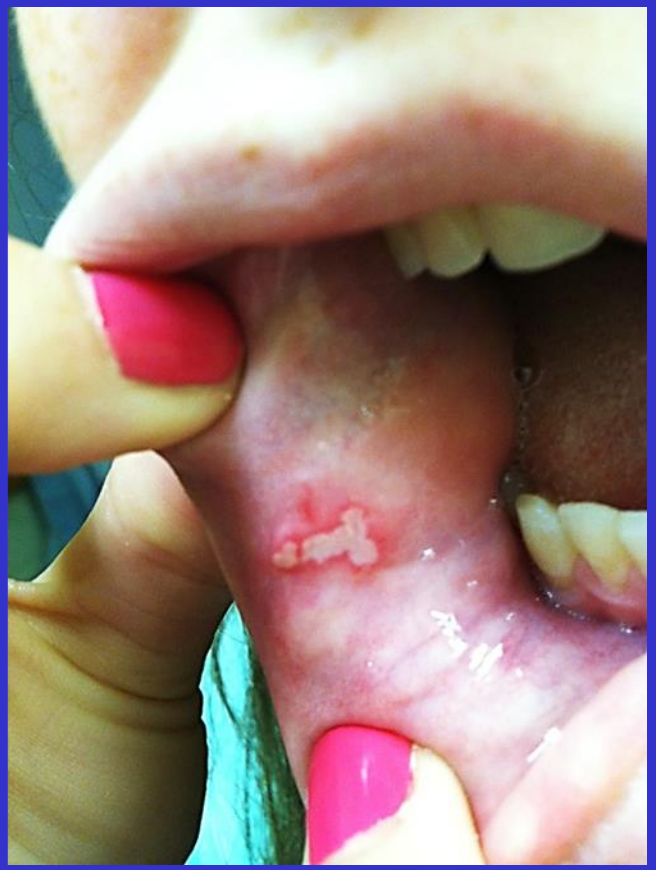


leukocytes, bacteria

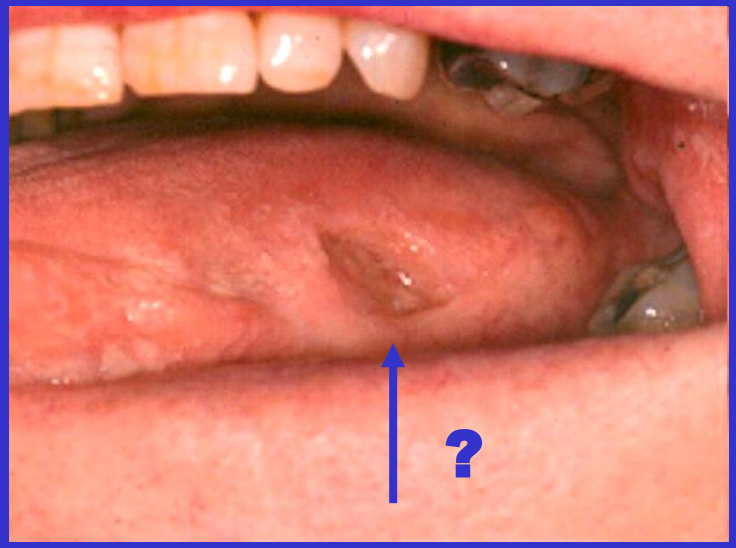


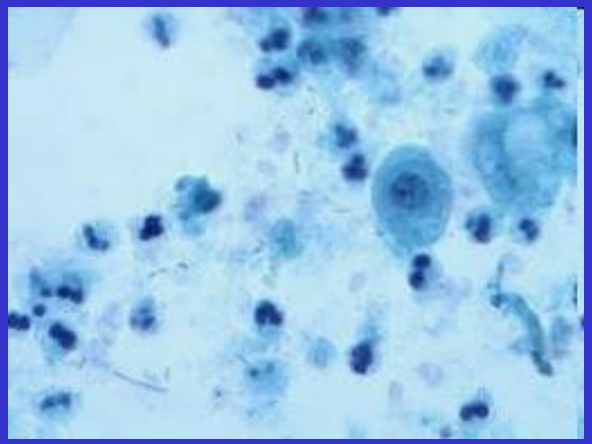
Gram –neg. gonorrhea

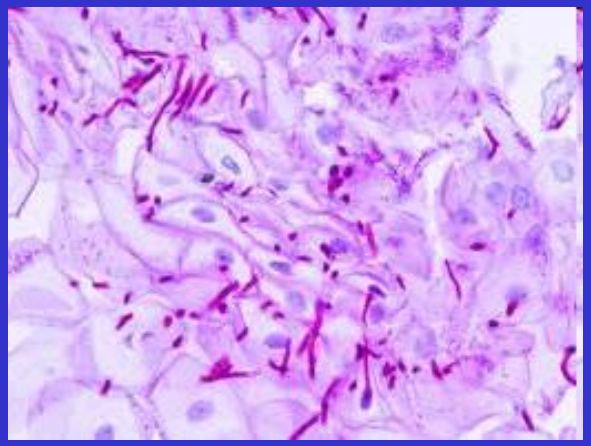
No pathological processing is needed…



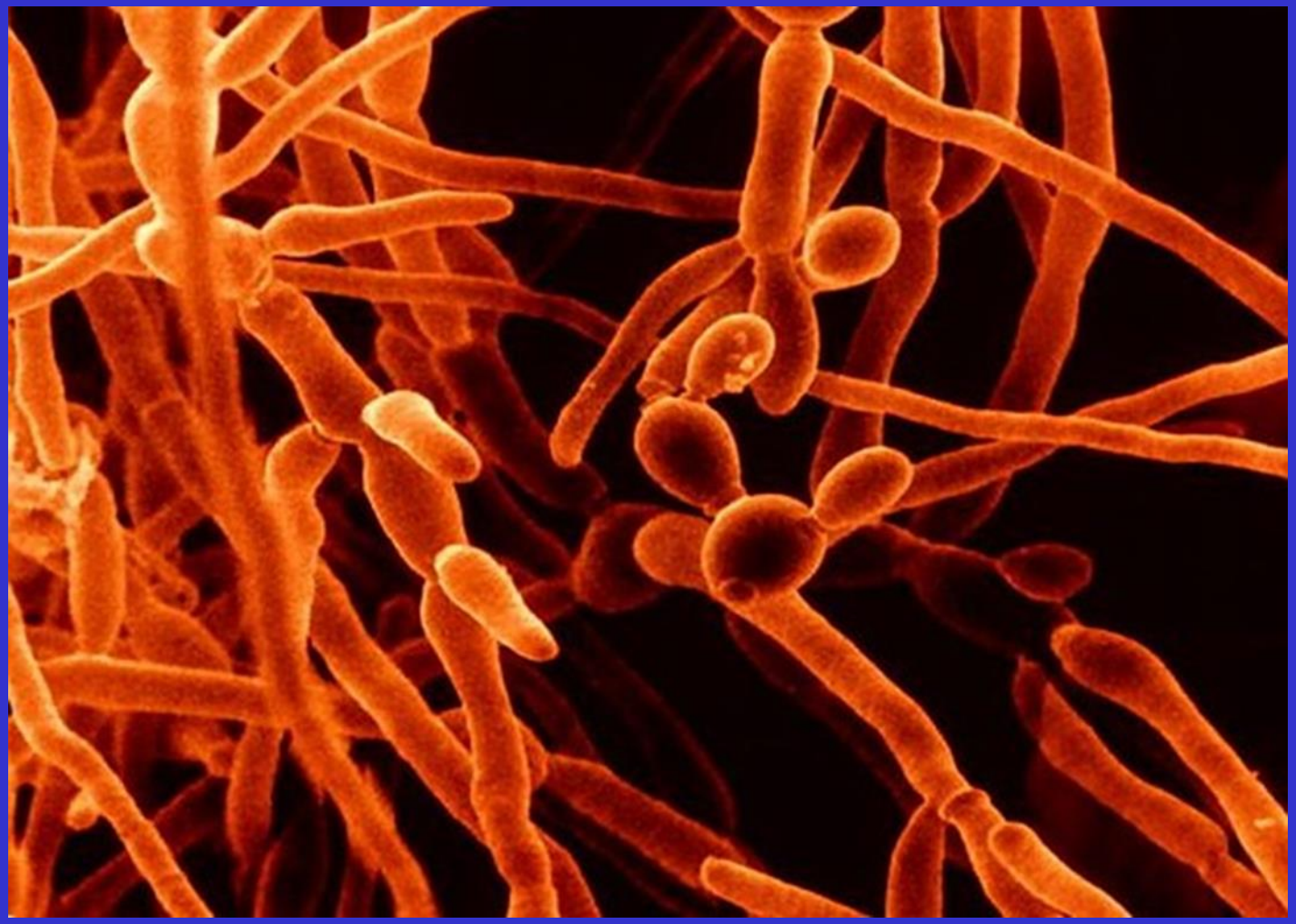
Cytology



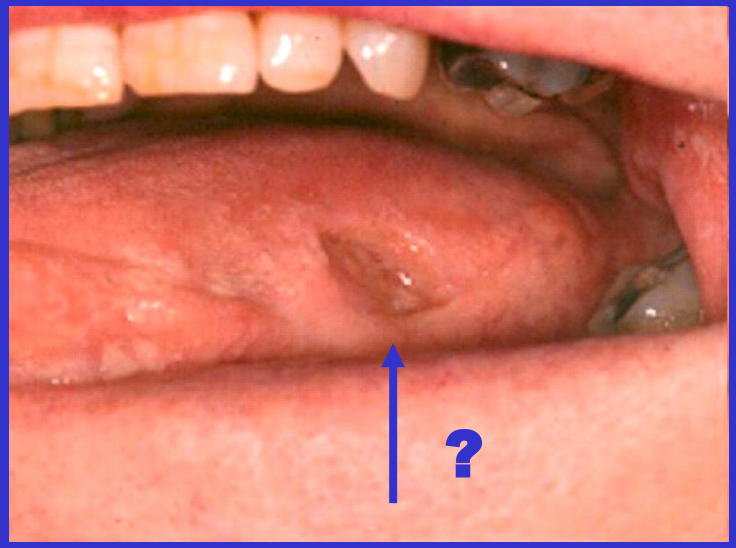


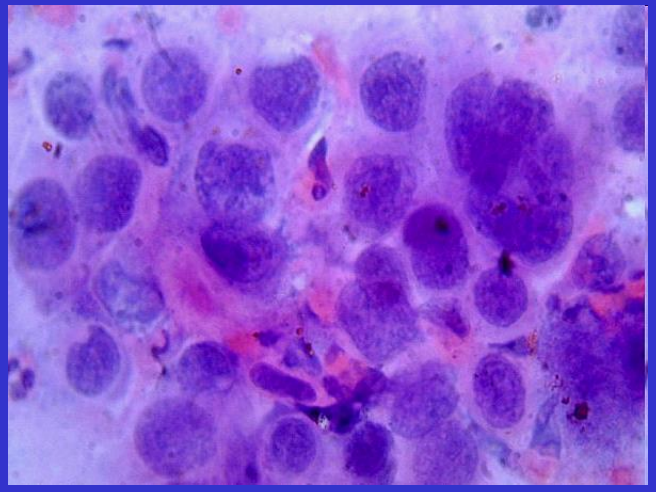


inflammatory cells, fungus-like elements PAS - Candida infection

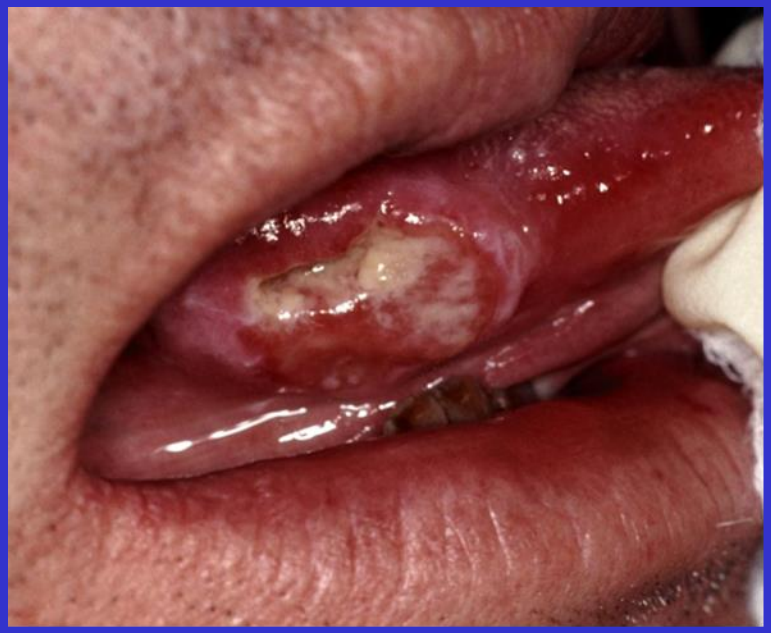


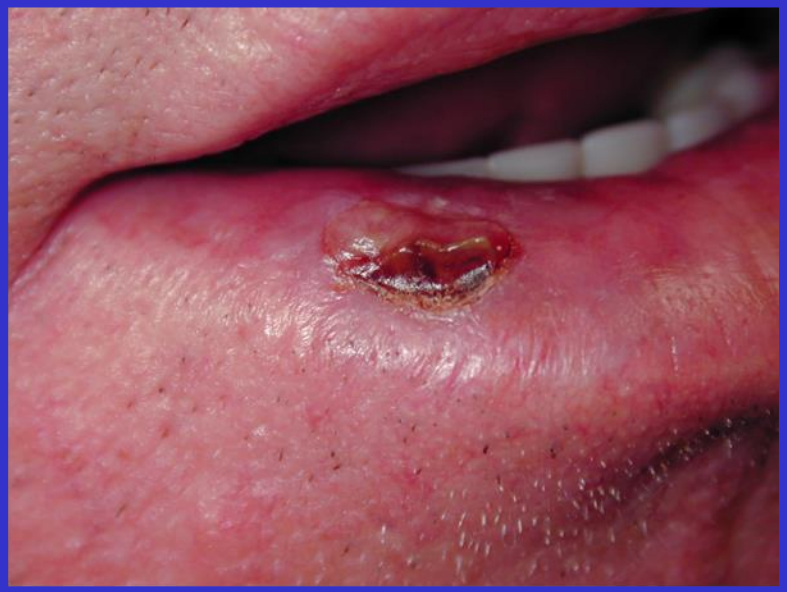
Cytology

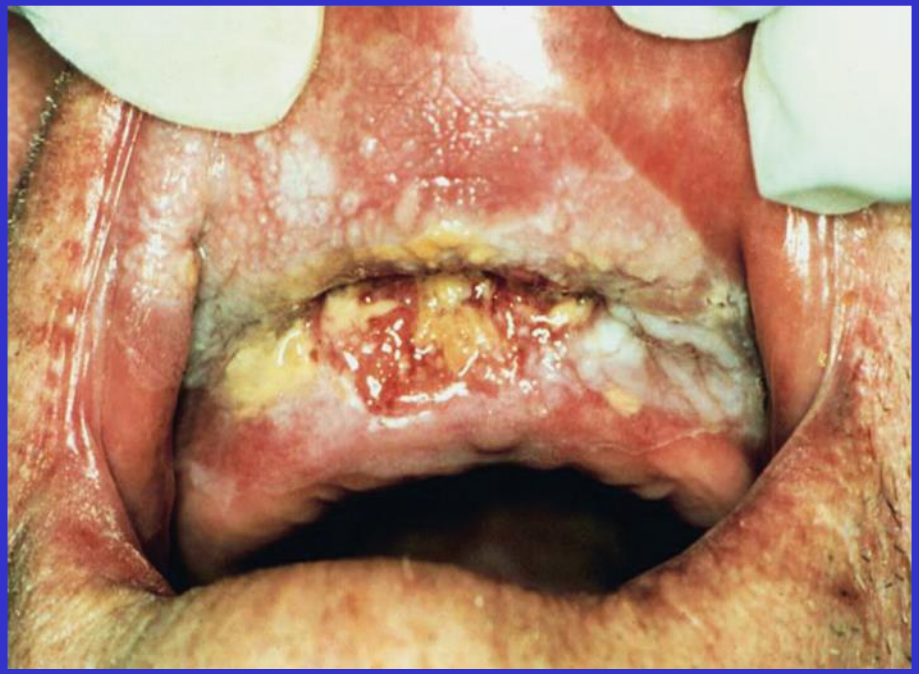




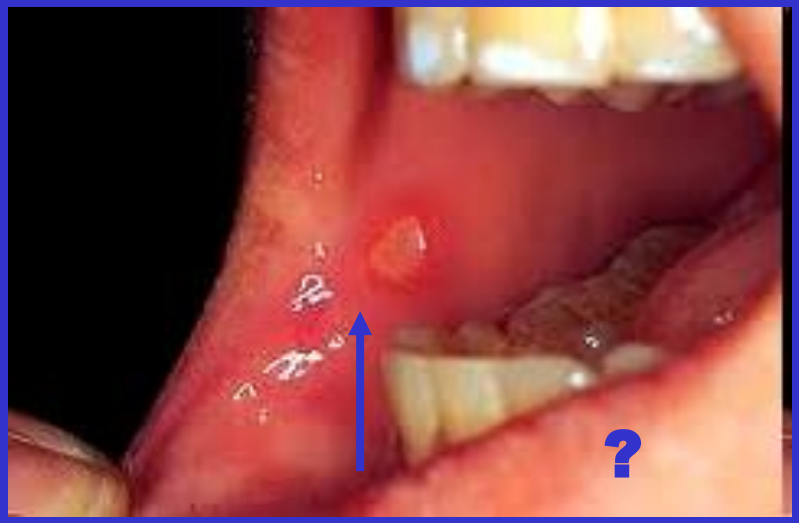
Polymorphous cells - squamous cell cancer

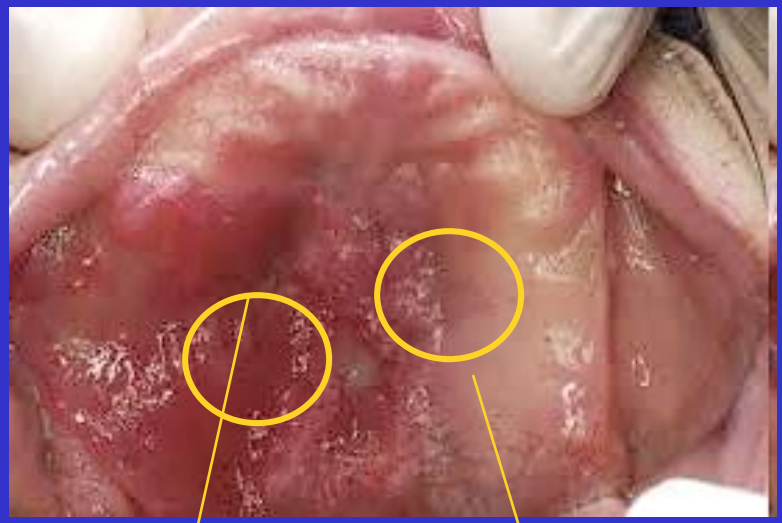


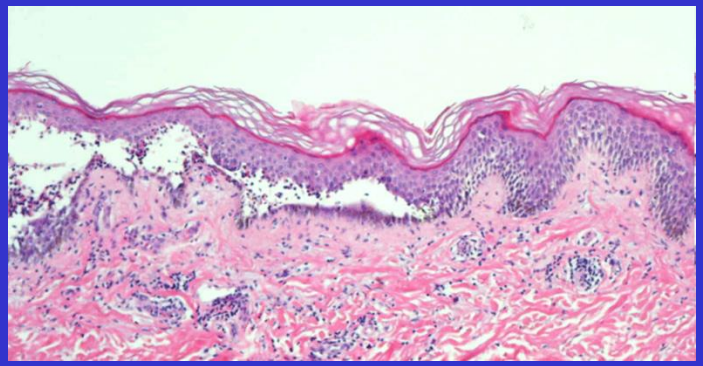




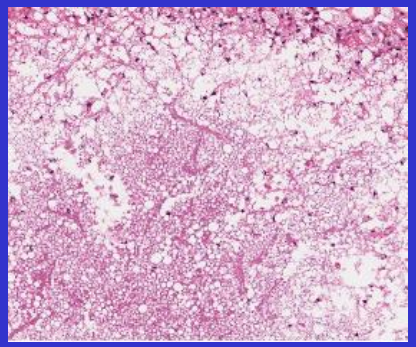
Histology







Suprabasal dyshesion (pemphigus)



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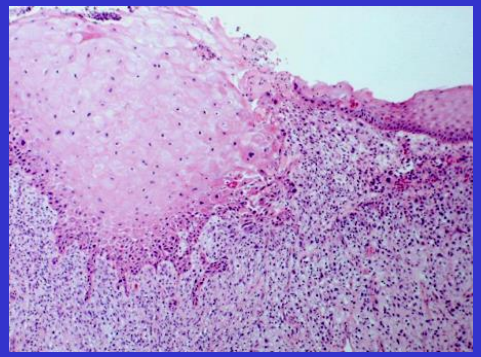
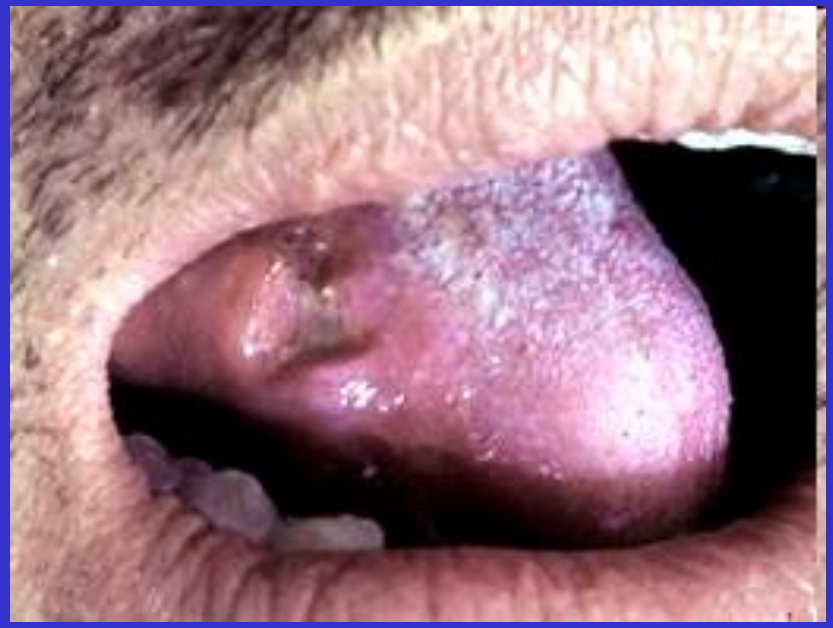
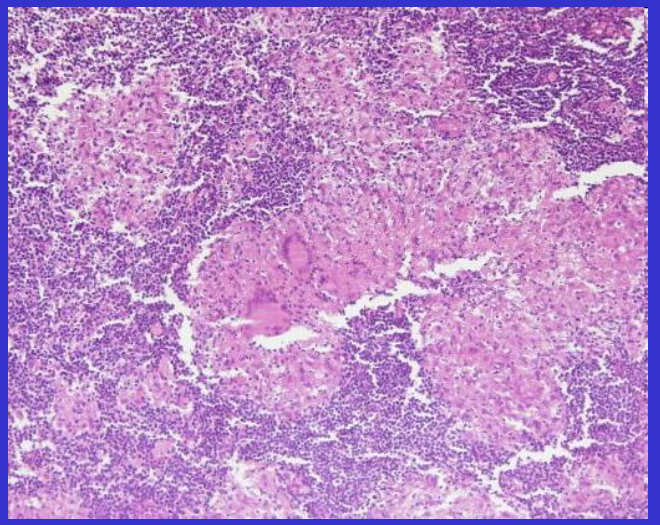
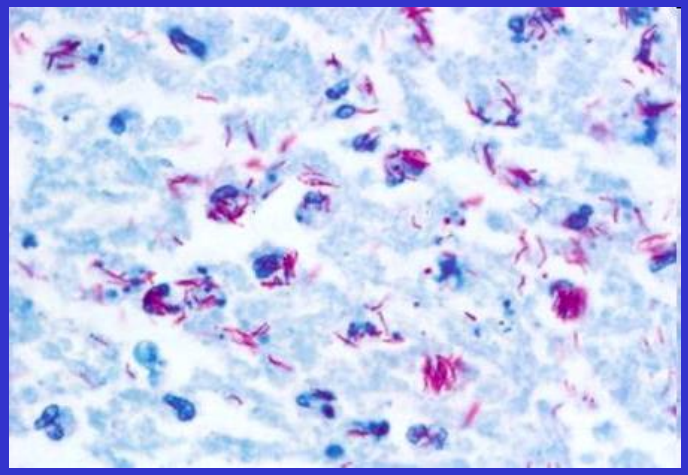


Histology

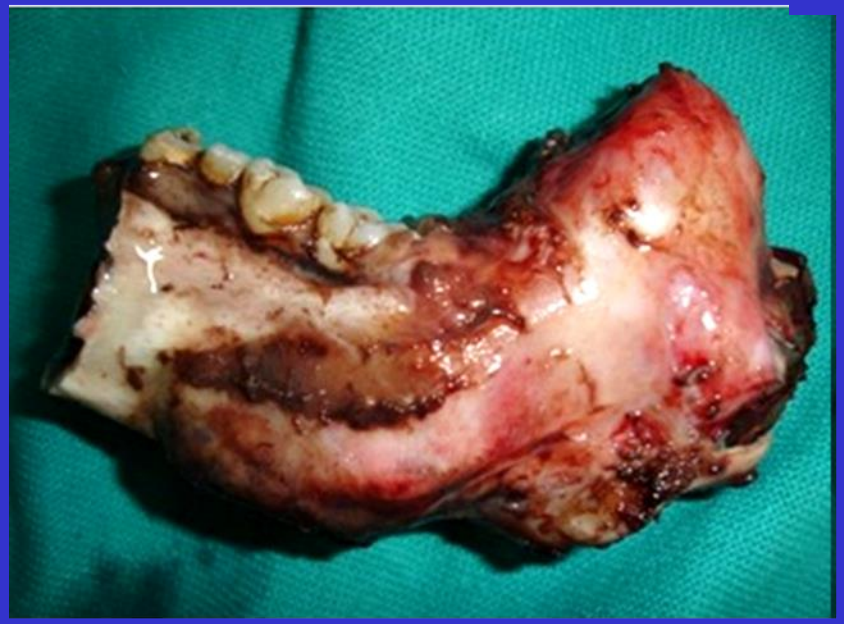


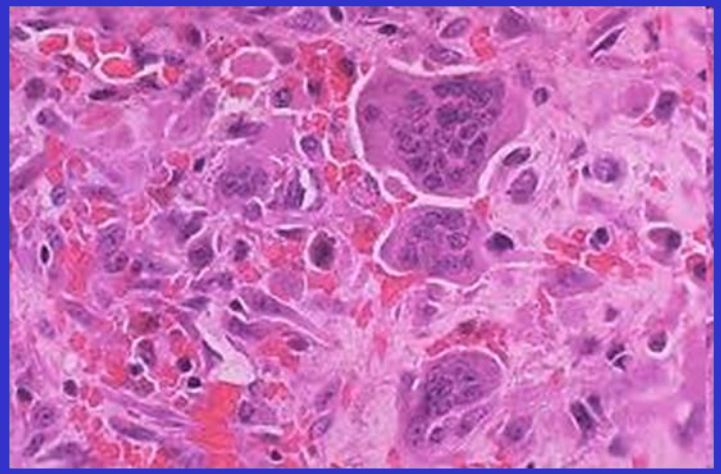


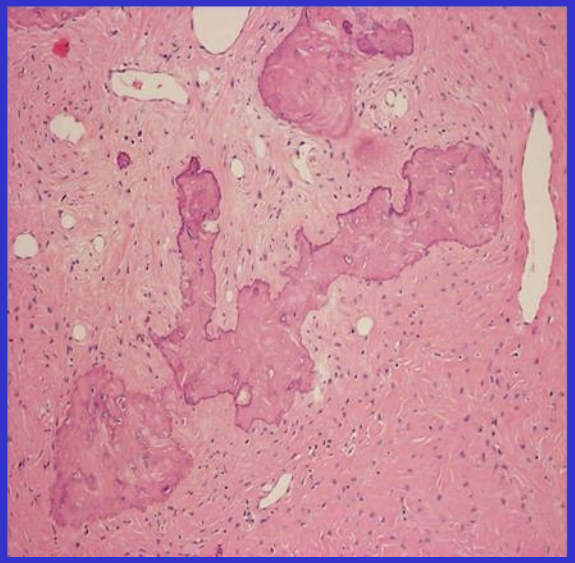


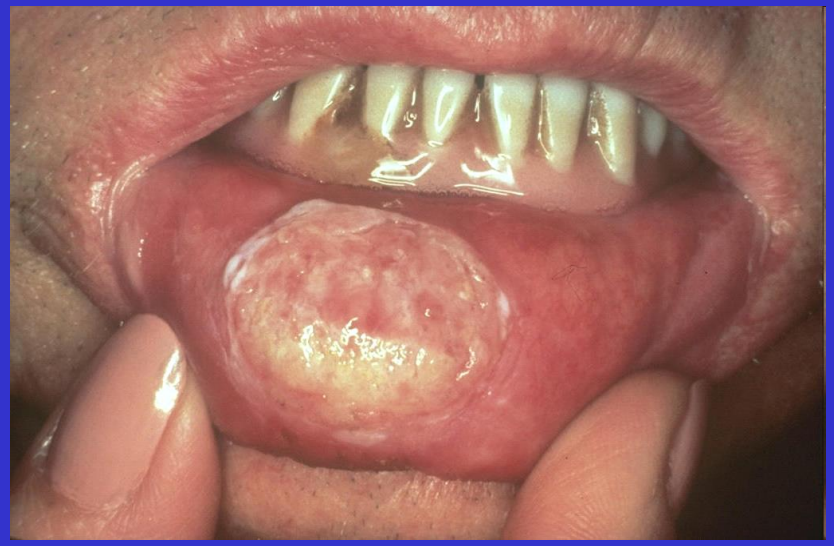
(Ziehl-Neelsen)

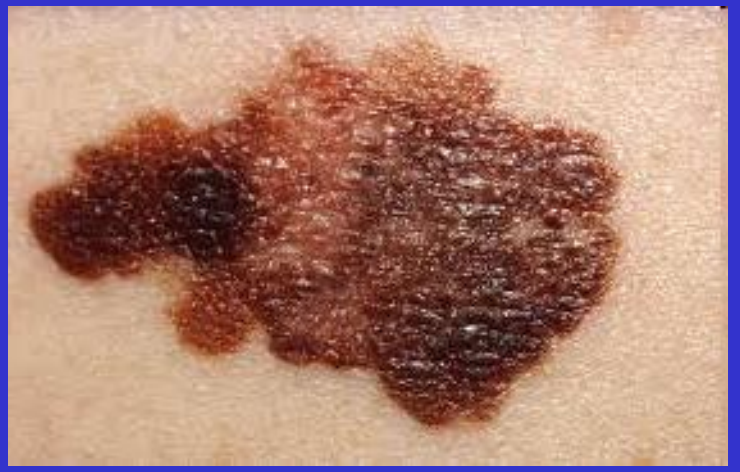
Bony lesions

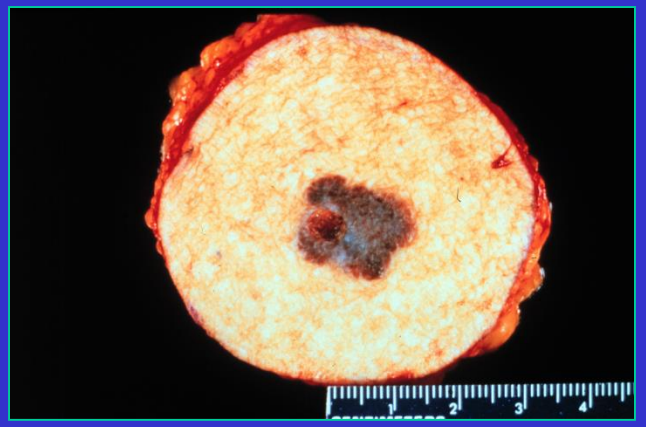


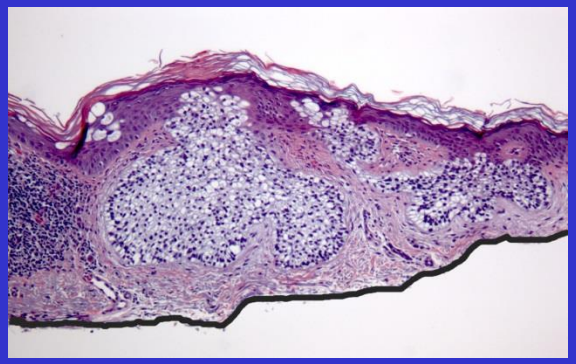


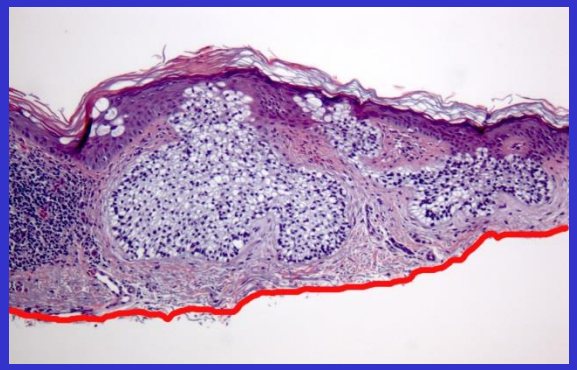


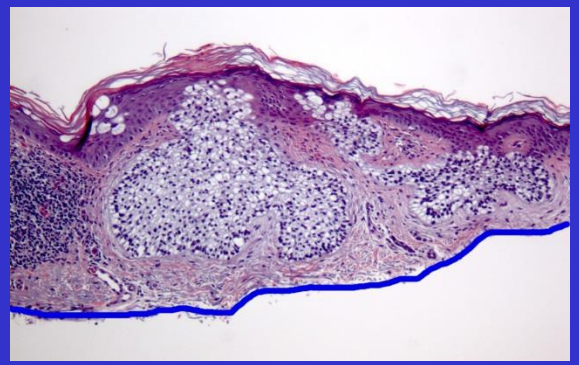




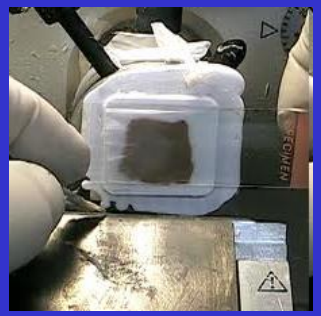


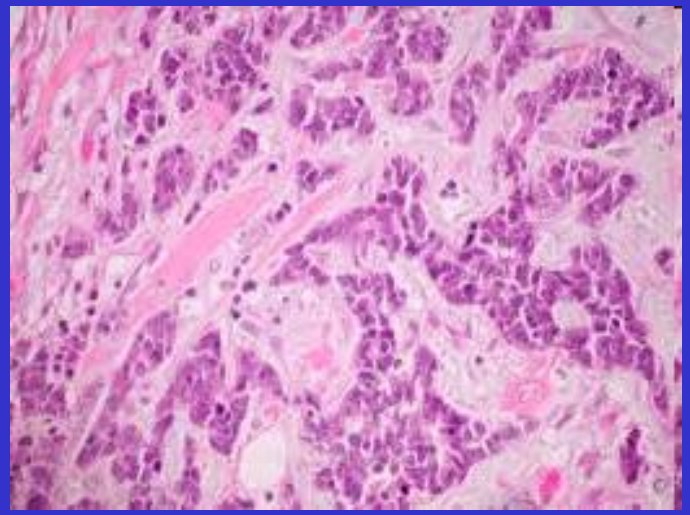


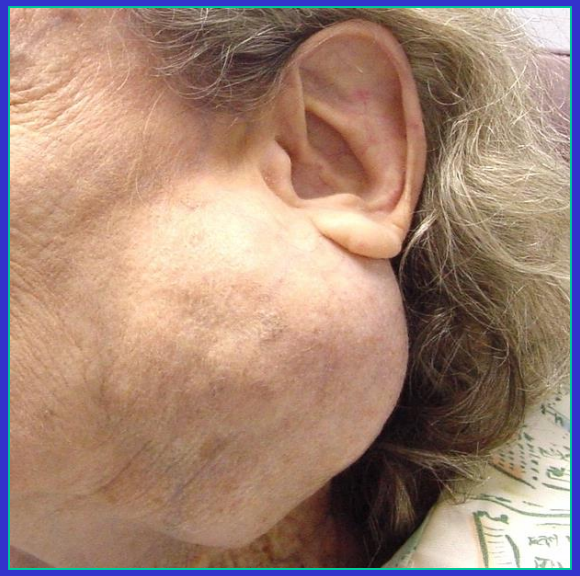




Intraoperative frozen sections

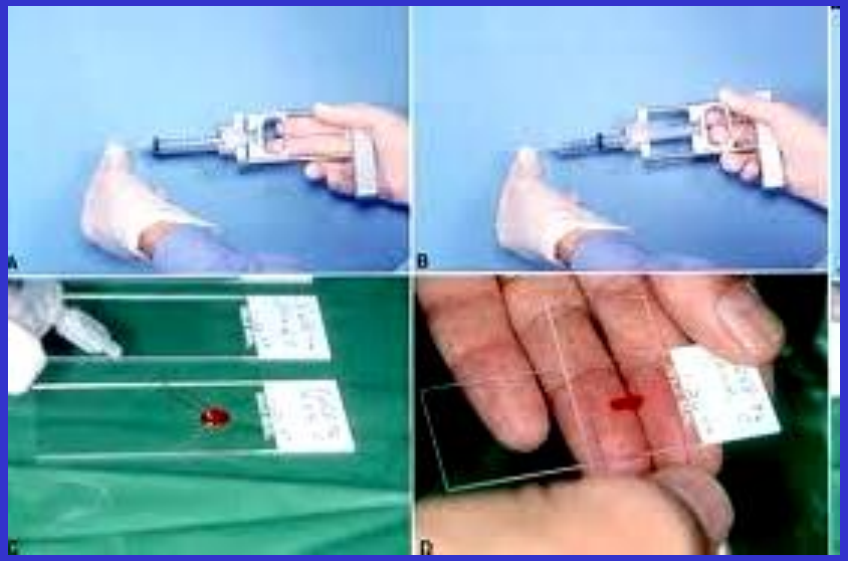


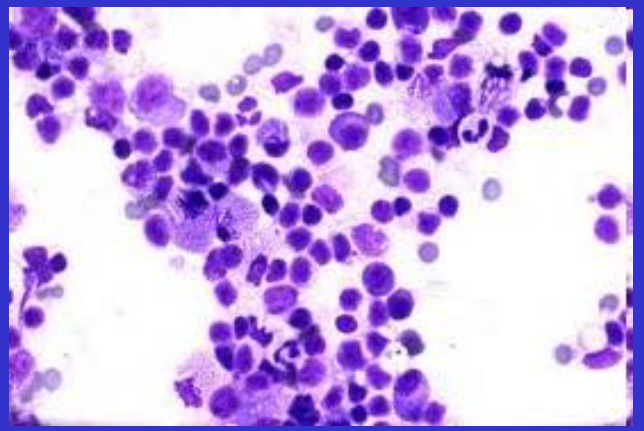




Fine needle aspiration cytology

(ABC, FNAC, FNAB)





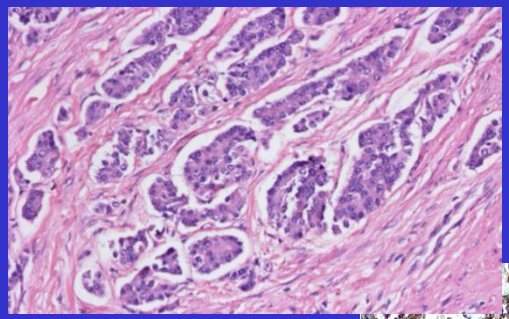
Sending materials to pathology

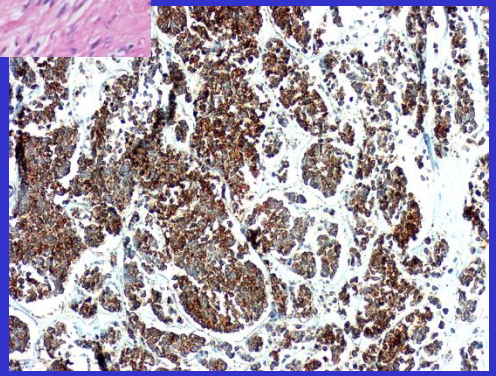
Formalin (4 – 8 %)

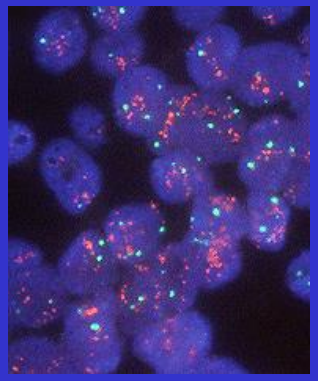
Routine histology

Molecular pathology

Immunohistochemistry





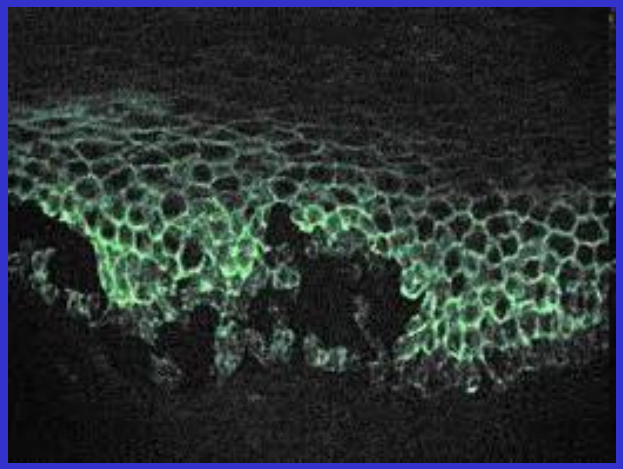


Saline

Frozen sections

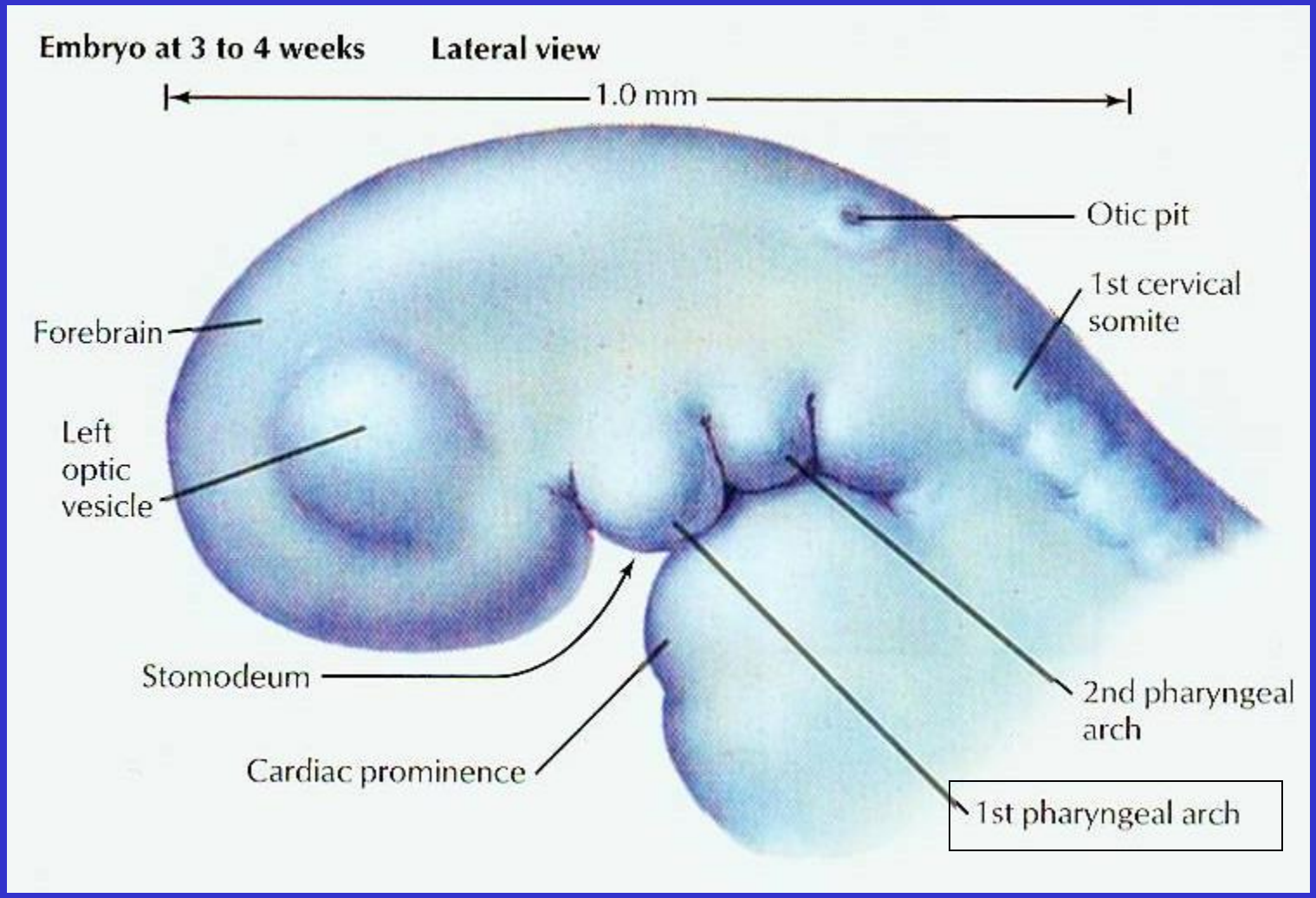
Immunofluorescent m.

(Electron microscopy)



OROFACIAL MALFORMATIONS

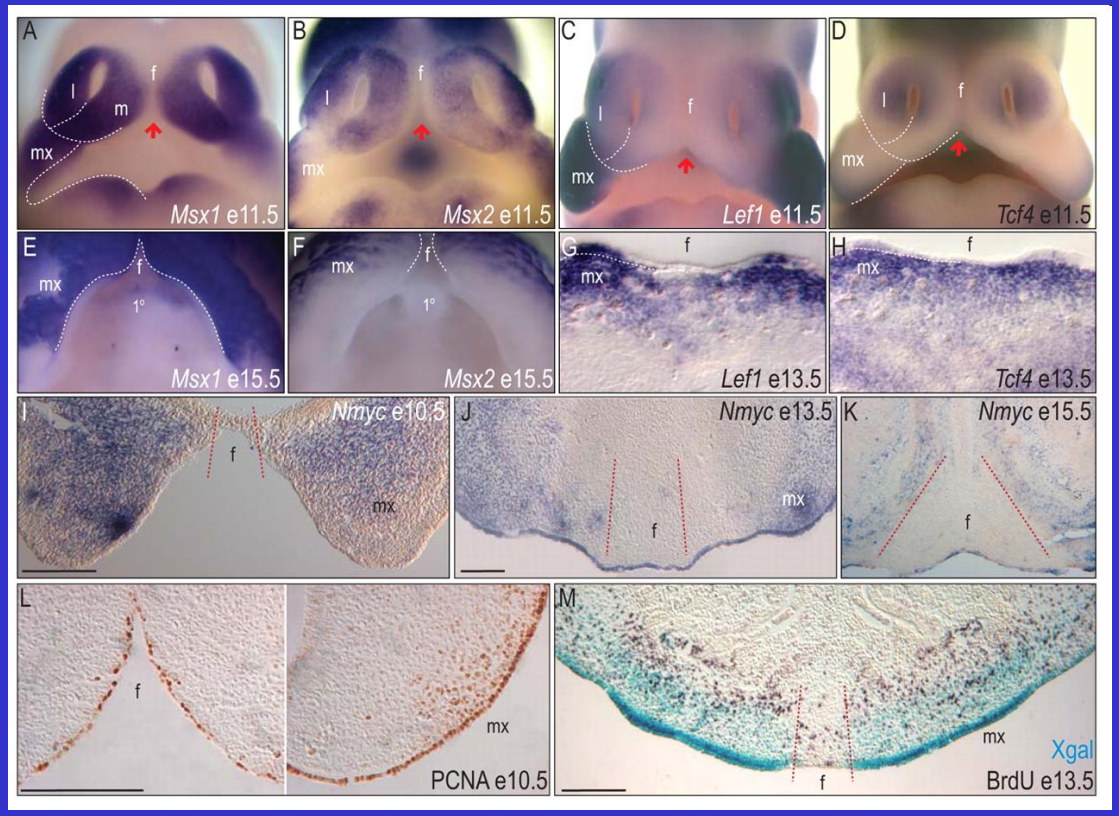
ATTILA ZALATNAI


Embryo at 3 to 4 weeks
Lateral view
1.0 mm
Otic pit
1st cervical somite
Forebrain
Left optic vesicle
Stomodeum
2nd pharyngeal arch
Cardiac prominence
1st pharyngeal arch

derivates of the 1st branchial arch are:

maxilla, mandible, zygomatic, palate,
muscles of mastication

WNT-signaling pathway has a key importance



WNT family

Regulate cell-to-cell

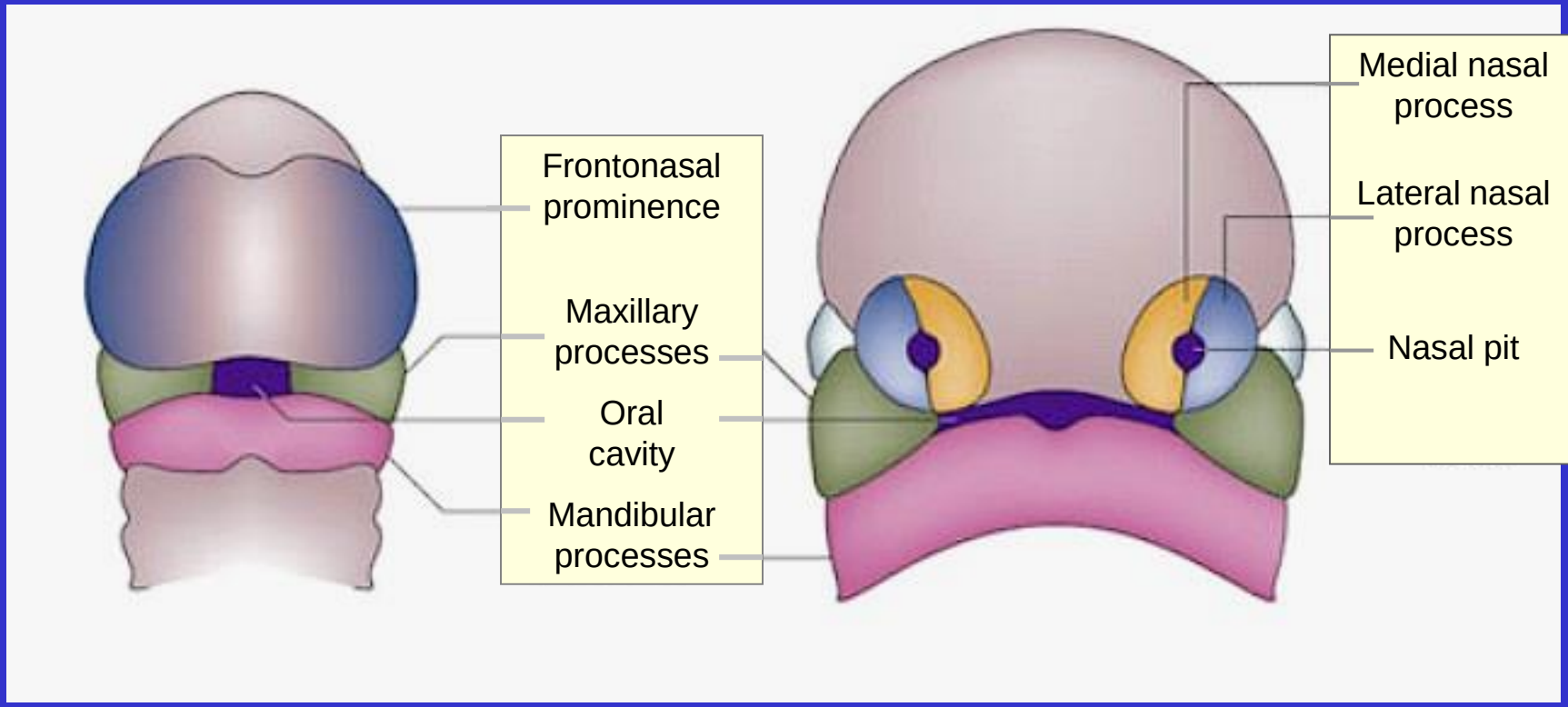
interactions during

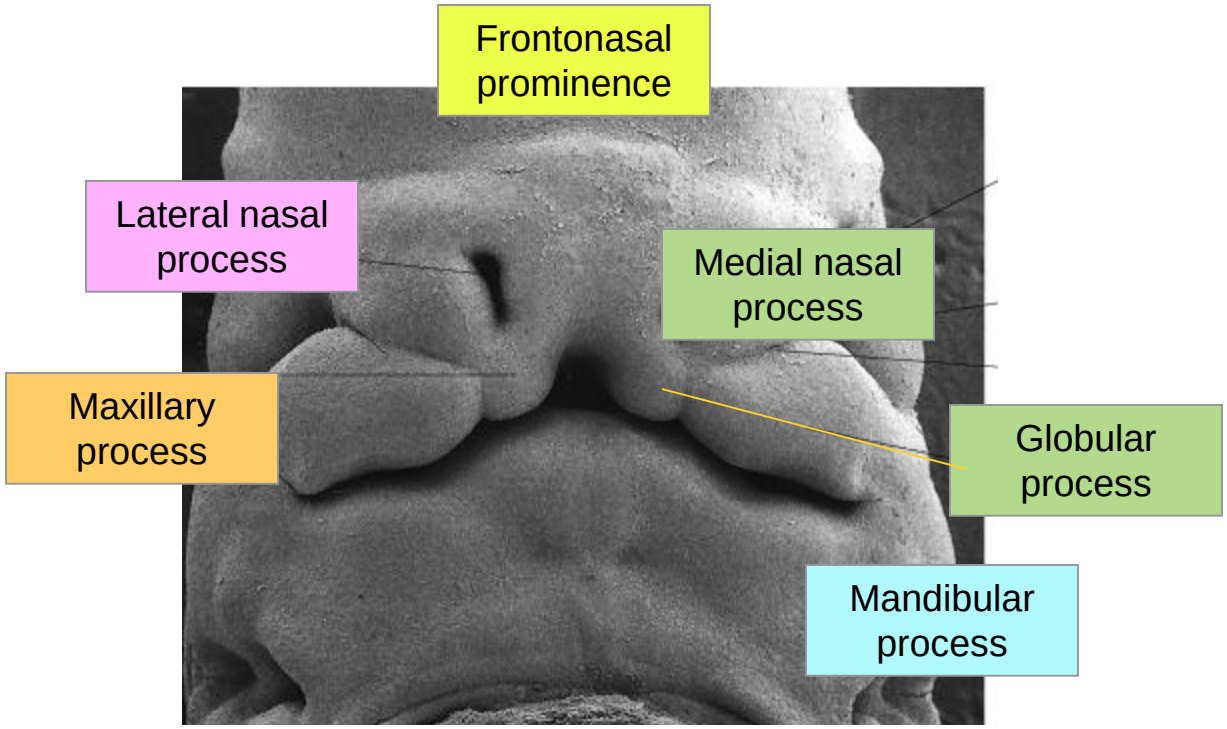
embryogenesis

Mutations:

lead to malformations

week 4 → week 5


Frontonasal prominence
Maxillary processes
Oral cavity
Mandibular processes
Medial nasal process
Lateral nasal process
Nasal pit


Frontonasal prominence
Lateral nasal process
Medial nasal process
Maxillary process
Globular process
Mandibular process

Week 6

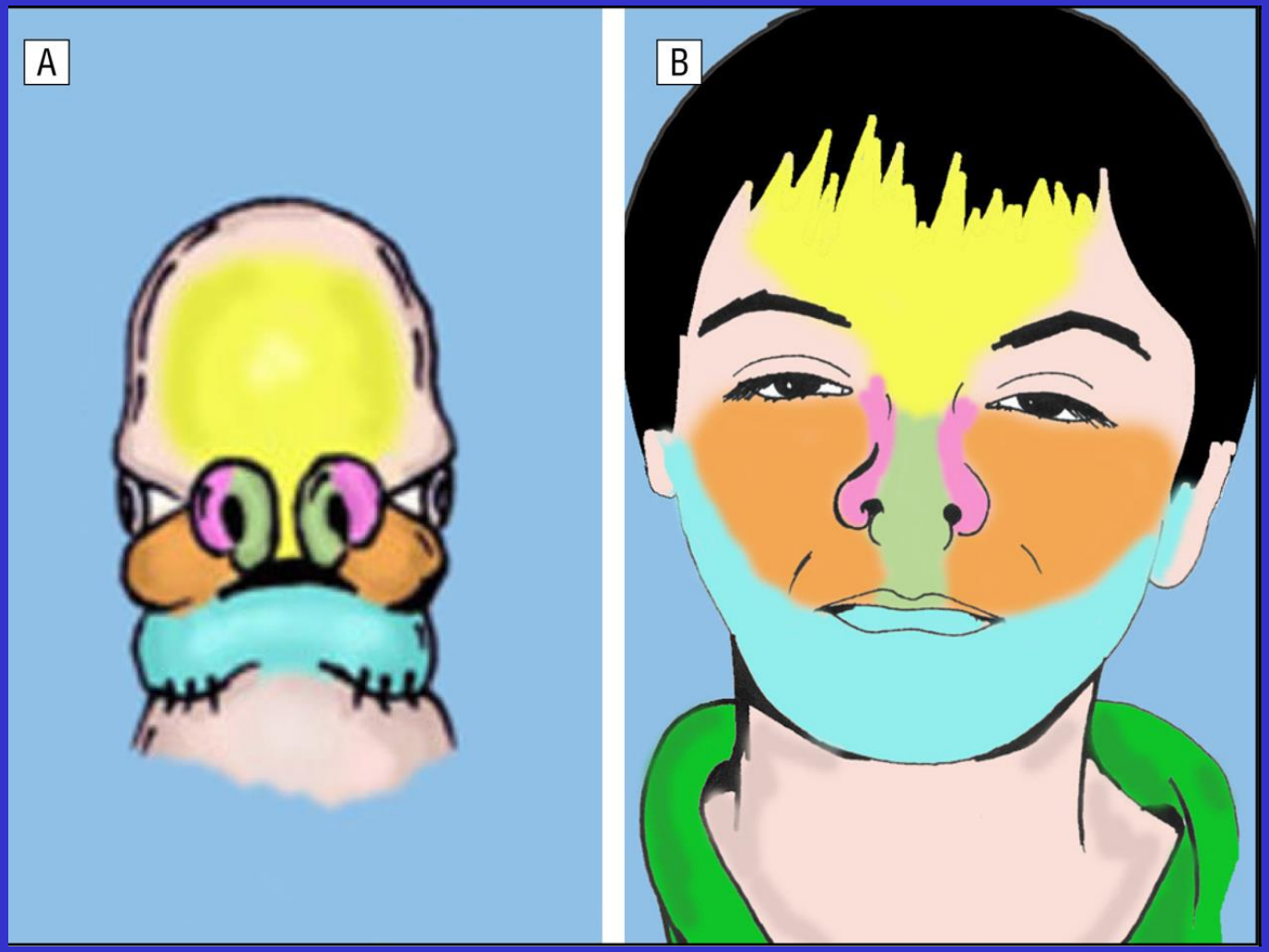
Frontonasal prominence

Lateral nasal process

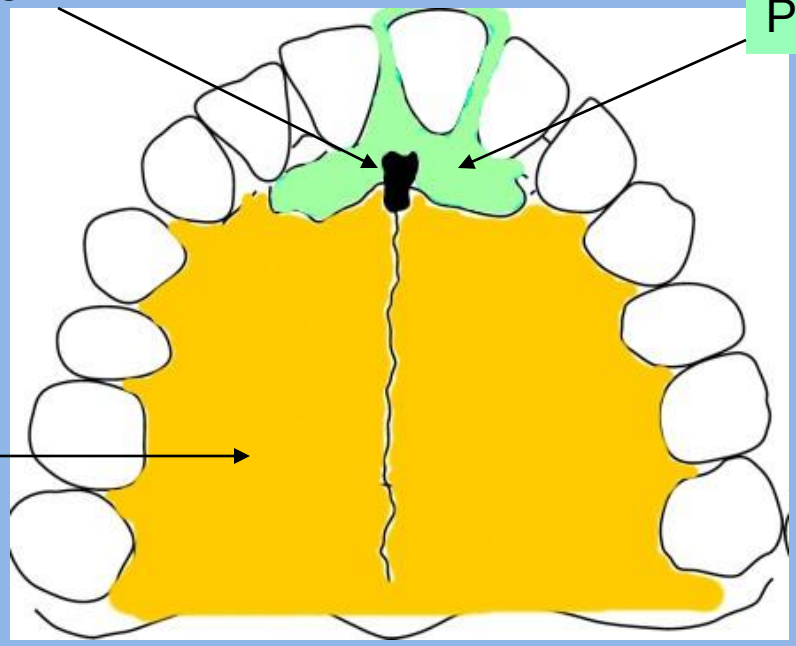
Medial nasal process

Maxillary process

Mandibular process

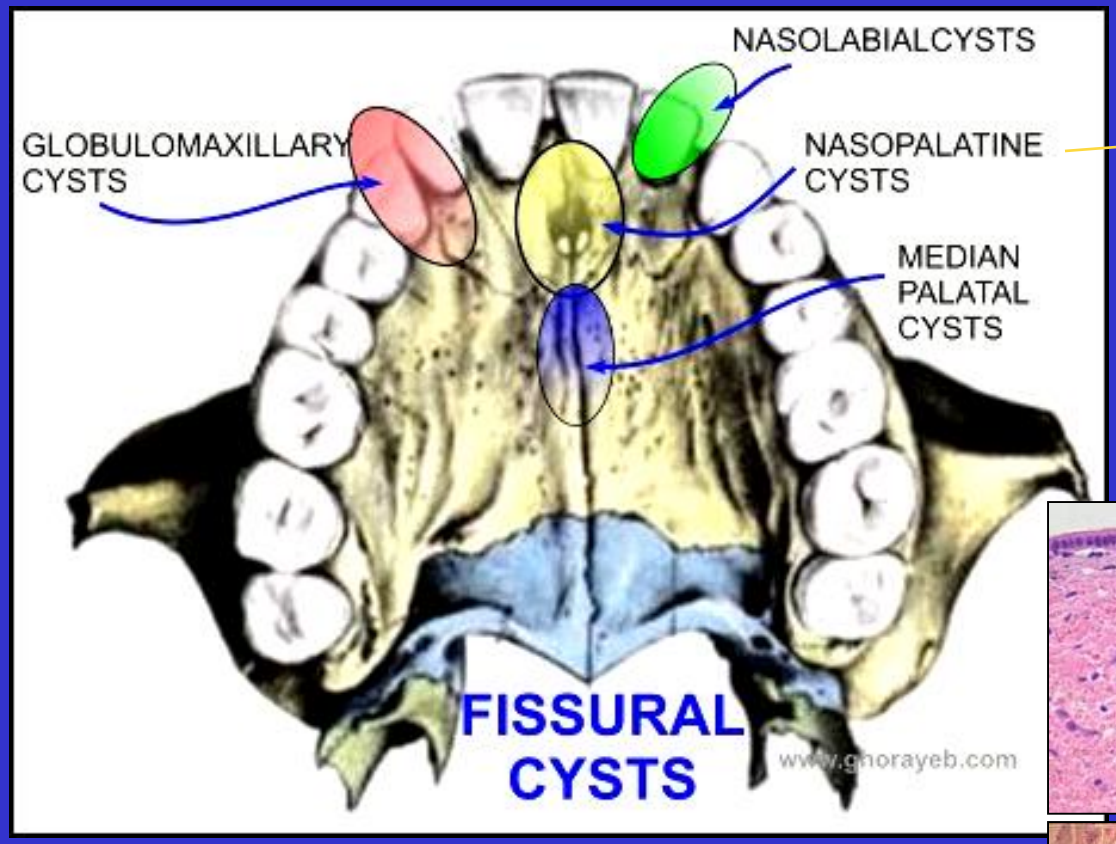


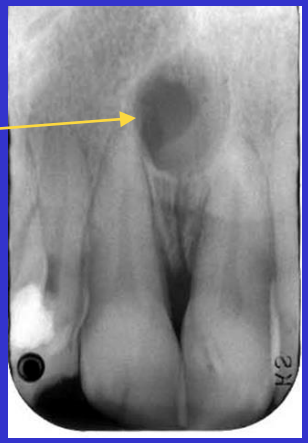
Development of palate

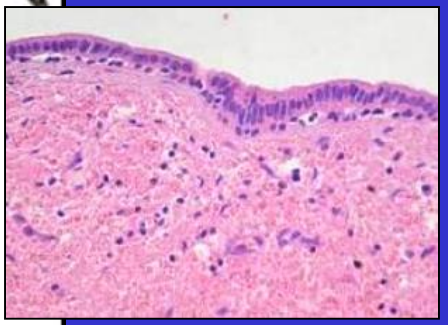


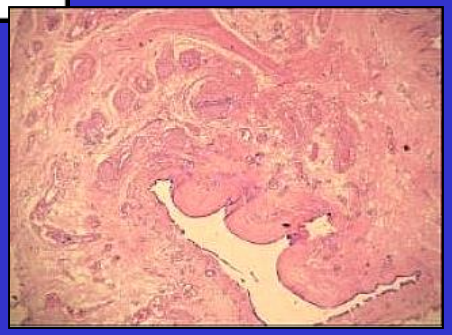
Palate malformations – fissural (non-odontogenic) cysts–

?









Facial clefts (defective fusion)

Frequency at birth (Hungary) : 2 ‰ (180-200 cases per year)

Multifactorial origin:

(mutations in the genes governing migration, noxas affecting during pregnancy:

smoking, víral infections, drugs, chemicals, overuse of vitamin A, X-linked forms)

As parts of various syndromes (appr. 150)

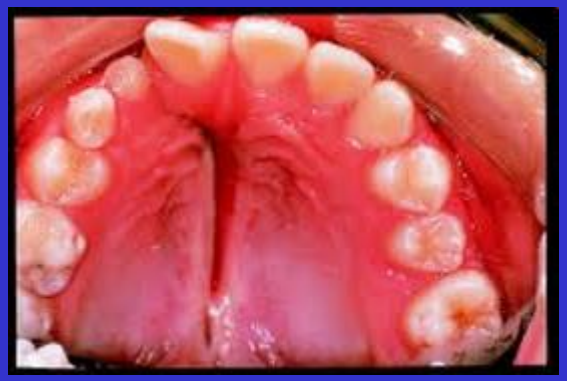
a. **Cleft lip (labium leporinum) ± cleft palate (faux lupina)**
b. **Isolated cleft palate**
c. **Gnathoschisis (split alveolar process)**
d. **Cheilognathopalatoschisis**

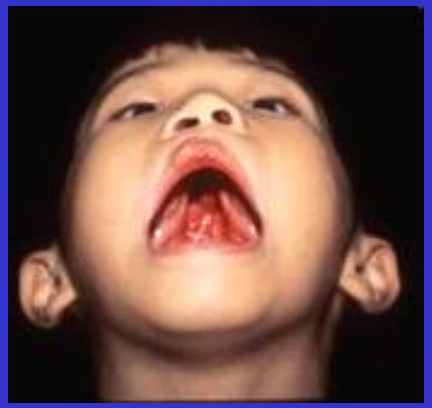
Cleft lips

Unilateral or bilateral

Complete of incomplete

Cleft palate





a. Cleft lip (labium leporinum) ± cleft palate (faux lupina)

teratogenic effects: 7-9. gestation weeks

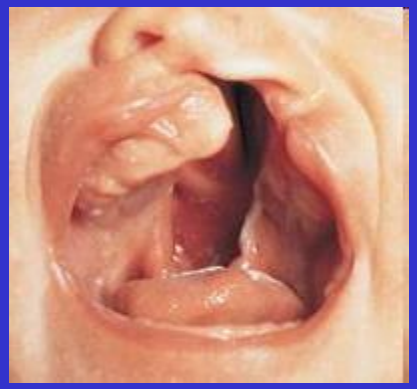
b. Isolated cleft palate

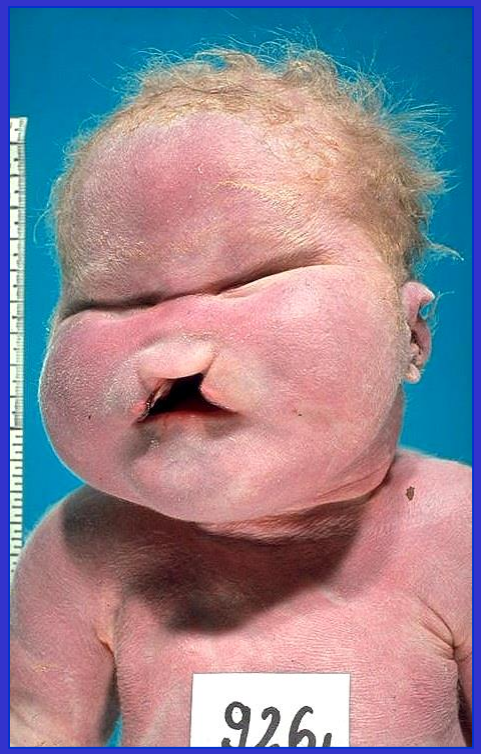
teratogenic effects: 10-14. weeks

+ different genetic background


BEFORE
AFTER

Cheilognathopalatoschisis






179/2006

Disorders of the development of teeth I.

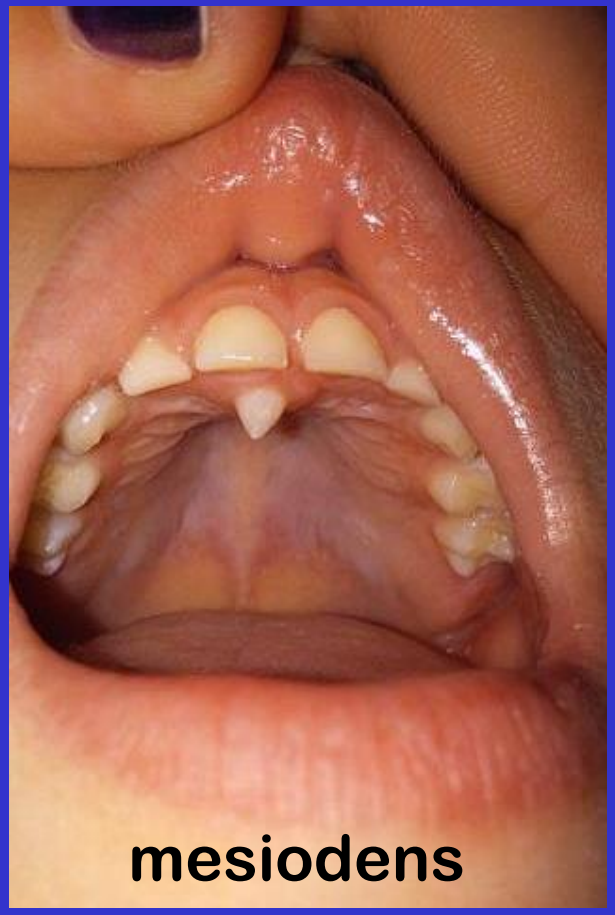
Abnormalities in the differentiation of the dental lamina or the tooth germs

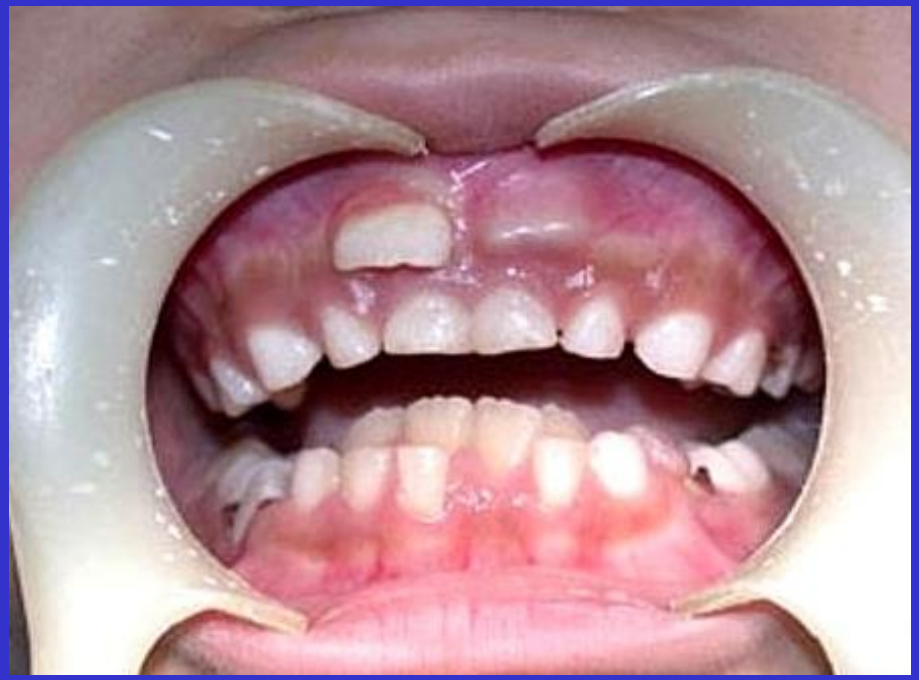
1. Abnormalities of morphodifferentiation (number, size, shape)
2. Abnormalities of histodifferentiation (structural alterations in the teeth)
3. Both stages of differentiation are abnormal

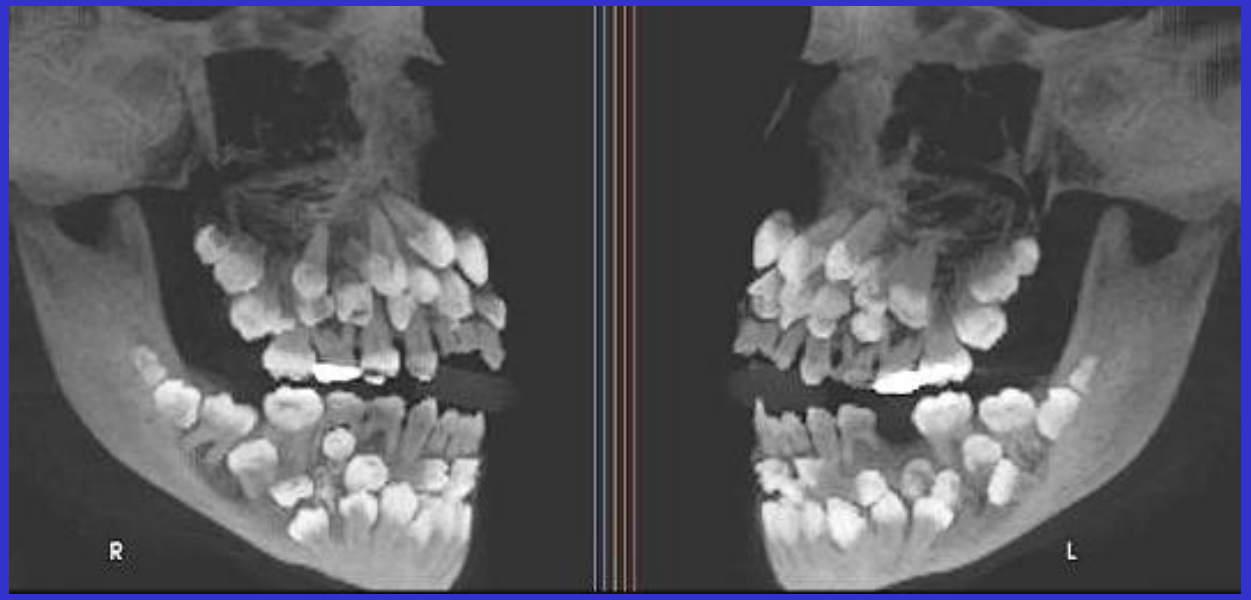
1. Hypodontia, anodontia (1 ore more teeth are missing)
   - most common in females
   - permanent teeth are typically involved
   - mutations in the regulatory genes

   Hyperdontia (supernumerary teeth)
   - more frequent in females and in the maxilla
   - permanent teeth are involved (in deciduous teeth exceptional)
   - may be associated with other abnormalities (e.g. cleft palate)

   Macrodontia. Microdontia
   - microdontia caan be associated with Down-syndrome, congenital heart malformations,


mesiodens




R
L

Disorders of the development of teeth II.

Disturbances in tooth form may involve the crown, the root or both
Double teeth

2. Enamel hypoplasia (defective matrix production by the ameloblasts)

Amelogenesis imperfecta (AD, X-linked - mutation in amelogenin gene
Dentionogenesis imperfecta
- associated with osteogenesis imperfecta (Type I)
- autosomal dominant (Type II, only the teeth are affected)

Dentinal dysplasia (rootless teeth)
Hypercementosis (idiopathic or resulted from known causes – periapical inflammation, mechanical stimulation, Paget's disease)

Eruption disturbances

Rare

a.) Associated with other bone lesions
- cretinism
- rickets

b.) Local factors
- e.g. gingival fibromatosis