CLINICAL STOMATOLOGY CONFERENCE

DNSC D9910.00

October 24, 2007

Gingival swellings

Overview

Localized
- Epulis
  a. Fibroma
  b. Pyogenic granuloma
  c. Peripheral giant cell granuloma (PGCG)
  d. Peripheral ossifying fibroma (POF)
- Metastatic lesions

Generalized
- Drug-induced gingival hyperplasia
- Leukemic infiltrate

Epulis

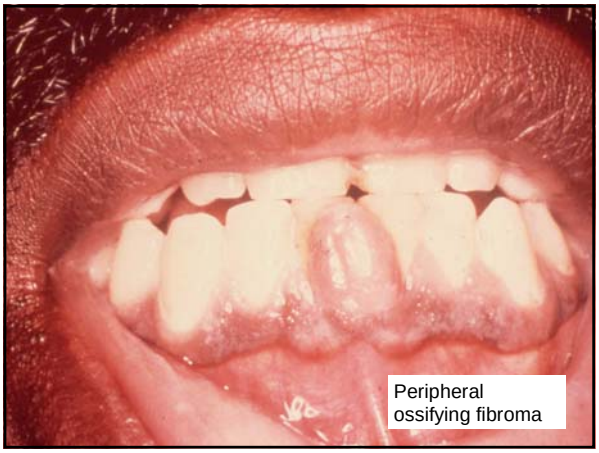
- Definition:
  Growth of the gingiva or alveolar mucosa
- Includes: ***Fibroma***
  Pyogenic granuloma
  Peripheral giant cell granuloma
  (giant cell epulis)
  Peripheral ossifying fibroma
  (ossifying fibroid epulis)
  Epulis fissuratum
  Congenital epulis of the newborn
  Gingival cyst of the adult
  Gingival cyst of the newborn

Fibroma

- Etiology: Likely reactive hyperplasia of fibrous tissue in response to *local irritation* or *trauma*
- Gender: F>M
- Age: Most common in 4^{th}-6^{th} decade
- Site: Gingiva; any oral site
- Clinical features:
  Pink-white, firm nodule
  Sessile or pedunculated

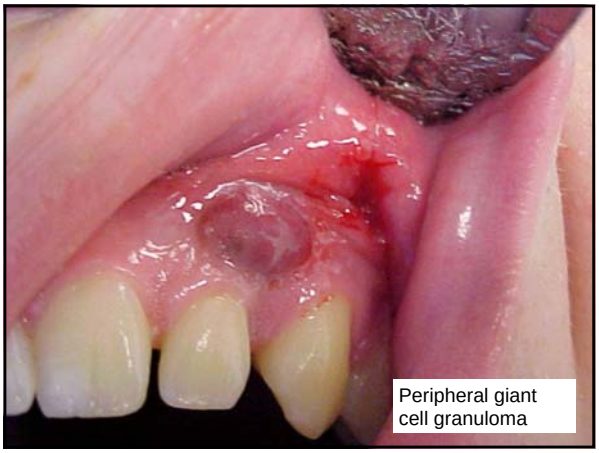
Fibroma

- Differential diagnosis:
  1) Peripheral ossifying fibroma
  2) Pyogenic granuloma – red/purple
     ** NOTE: Many fibromas may be maturing PGs
  3) Peripheral giant cell granuloma – bluish
  4) Neural lesion (e.g. neurofibroma, schwannoma)



Peripheral ossifying fibroma

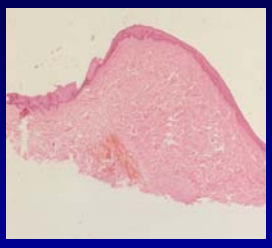
Pyogenic granuloma



Peripheral giant cell granuloma

Fibroma

- Histology:
  - mass of fibrous connective tissue
  - covered by stratified squamous epithelium
  - ± hyperkeratosis
  - ± inflammation



- Treatment: Conservative surgical excision

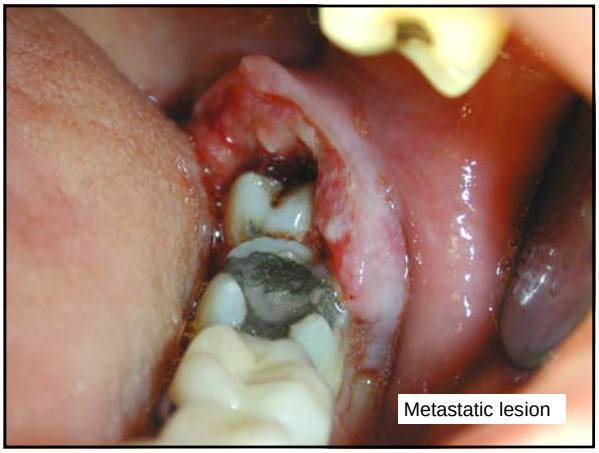
Pyogenic granuloma

- Etiology: Exuberant tissue response to local irritation or trauma
- Gender: F>>M
  May be related to effects of female hormone
- Age: Children, young adults
  Pregnant women
- Site: Gingiva (75% of cases), facial>lingual
  Any site
- Clinical features:
  Smooth or lobulated
  Red, purple; ulcerated
  Mostly pedunculated

Pyogenic granuloma

- Differential diagnosis:

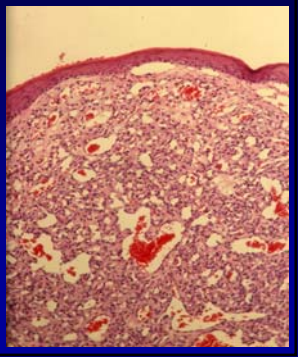
  1) Vascular neoplasm (e.g. hemangioma, KS)
     ** Hemangiomas and PGs are likely related entities
  2) Peripheral giant cell granuloma
  3) Peripheral ossifying fibroma
  4) Fibroma
  5) Metastatic lesion



Pyogenic granuloma

- Histology:
  - vascular proliferation (granulation tissue)
  - mixed inflammatory infiltrate
  - stratified squamous epithelium ± ulceration
  - *Older lesions*: Fibrous

  *** many fibromas may be matured PGs*



Pyogenic granuloma

- Treatment:

  Conservative surgical excision
  Scale adjacent teeth
  Multiple recurrences

Peripheral giant cell granuloma

- Etiology: Likely reactive to irritation/trauma
- Gender: F>M
- Age: Prevalence in 5th-6th decades
- Site: Gingiva, edentulous alveolar ridge
  Maxilla>mandible
- Clinical features:

  Bluish-purple nodule
  Sessile or pedunculated
  May be ulcerated

Peripheral giant cell granuloma

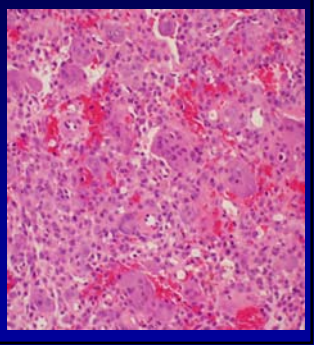
- Differential diagnosis:

  1) Pyogenic granuloma – red/purple
  2) Vascular neoplasm (e.g. hemangioma, KS)
  3) Peripheral ossifying fibroma
  4) Fibroma
  5) Metastatic lesion

Peripheral giant cell granuloma

- Histology:

  - proliferation of multinucleated giant cells
  - ovoid-spindle stromal cells
  - RBCs and hemosiderin
  - ± reactive bone
  - stratified squamous epithelium ± ulceration



Peripheral giant cell granuloma

- Treatment:

  Conservative surgical excision
  Scale adjacent teeth
  10% recur

Peripheral ossifying fibroma

- Etiology: Likely reactive in nature
  Origin from cells of periosteum/pdl
- Gender: F>M
- Age: Young adults
- Site: Exclusively on gingiva
  Maxilla>mandible
  >50% in incisor-canine region
- Clinical features:
  Red to pink nodule
  Sessile or pedunculated

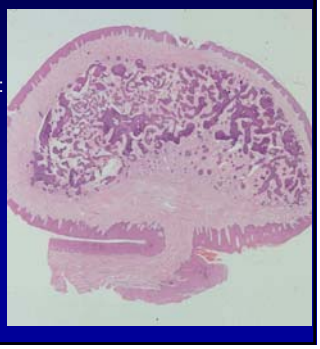
Peripheral ossifying fibroma

- Differential diagnosis:

  1) Fibroma
  2) Pyogenic granuloma
  ** NOTE: Many POFs may be matured and calcified PGs
  3) Peripheral giant cell granuloma
  4) Bony exostosis

Peripheral ossifying fibroma

- Histology:
  - fibroblastic proliferation
  - mineralized component: bone, cementum-like, dystrophic calcifications
  - stratified squamous epithelium ± ulceration



Peripheral ossifying fibroma

- Treatment:
  Conservative surgical excision
  Scale adjacent teeth
  16% recur

Metastasis to oral soft tissues

- Etiology: Lymphatic or ***hematogenous (blood-borne)*** spread of malignancies
- Incidence: Rare; 1% of all oral malignancies

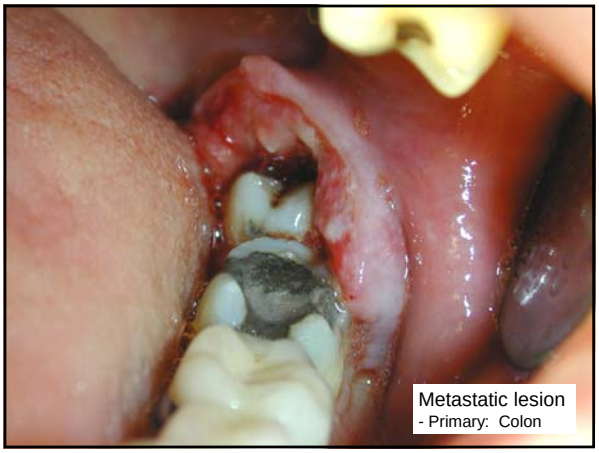
- Gender: M>F
- Age: Middle-aged, older adults
- Site: Gingiva
  Tongue

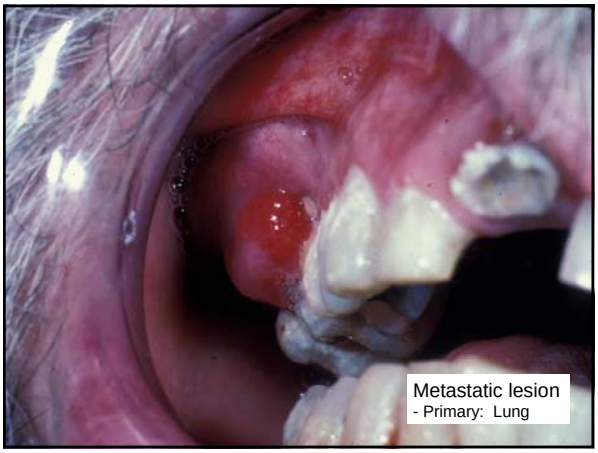
Metastasis to oral soft tissues

- Primary malignancy:
  Males: Lung (prostate typically metastasizes to bone)
  Females: Breast; lung will likely increase

- Clinical features:
  Nodule or mass; may be ulcerated

** Extrude from extraction socket



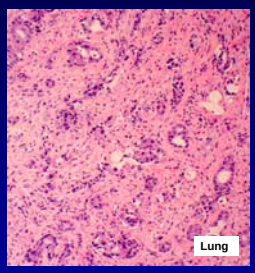


Metastasis to oral soft tissues

- Differential diagnosis:
  1) Pyogenic granuloma
  2) Vascular neoplasm (e.g. hemangioma, KS)
  3) Lymphoma; leukemia
  4) Squamous cell carcinoma
  5) Other epulides (PGCG, POF, fibroma)

Metastasis to oral soft tissues

- Histology:
  - histology similar to primary malignancy
  - most are carcinomas



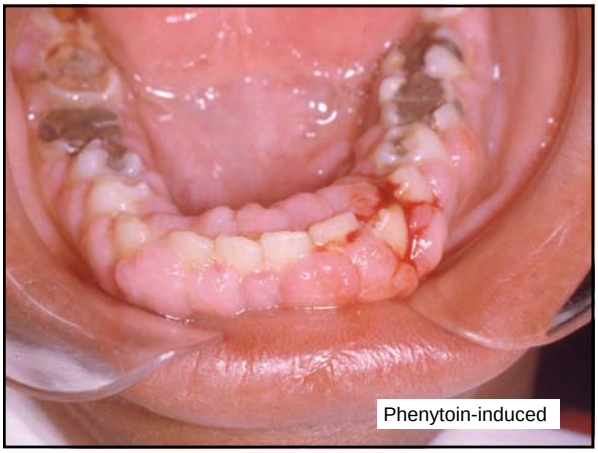
- Treatment: Sign of disseminated disease
  Poor prognosis

Drug-induced gingival hyperplasia

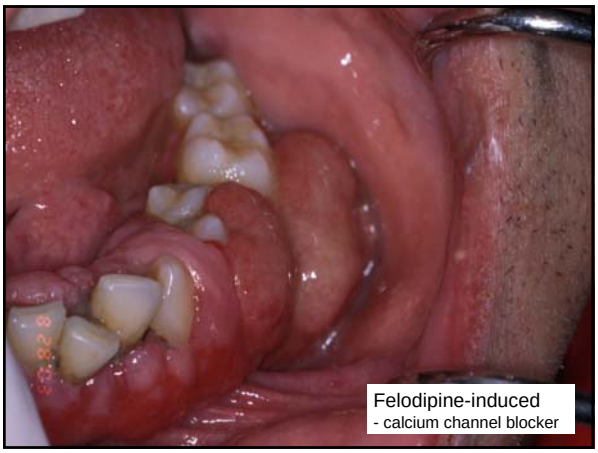
- Etiology: Abnormal gingival response to use of certain systemic medications
- Medications:
  Strongest association with: 1) Phenytoin
  2) Cyclosporine
  3) Nifedipine
- Incidence: Phenytoin = 50%
  Cyclosporin and Nifedipine = 25%
- Degree of enlargement dependent on patient's *level of oral hygiene*

Drug-induced gingival hyperplasia

- Gender: Any
- Age: Phenytoin - young patients (<25 yo)
  Nifedipine – older patients
- Site: Anterior/facial gingiva
- Clinical features:
  Typically begins 1-3 months after start rx
  Pink and firm
  If inflamed, red and edematous
  May completely cover crowns of teeth



Felodipine-induced
- calcium channel blocker



Felodipine-induced
- calcium channel blocker

Drug-induced gingival hyperplasia

- Differential diagnosis:
  1) Gingivitis associated with local factors
  2) Gingivitis associated with hormonal imbalance (e.g. pregnancy, puberty)
  3) Gingival fibromatosis
  4) Leukemic infiltrate

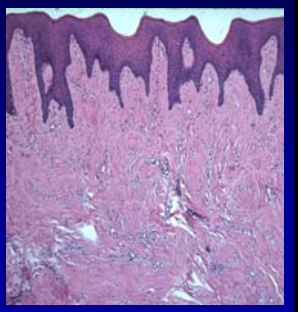
Gingivitis, local factors
- orthodontic brackets

Gingivitis, pregnancy

Hereditary gingival fibromatosis

Drug-induced gingival hyperplasia

- Histology:
  - stratified squamous epithelium
  - elongated rete ridges
  - generally, increased collagen
  - inflammation – lymphocytes and plasma cells



Drug-induced gingival hyperplasia

- Treatment:

Consult with physician
- possible change of medications

Professional prophylaxis

Gingivectomy

Periodic re-evaluation

Leukemic infiltrate

- Etiology: Malignant proliferation of hematopoetic stem cell derivatives
- May be component of *syndrome* (e.g. Down, Bloom, Neurofibromatosis, Klinefelter, etc.)
- Increased risk associated with exposure to certain *environmental agents* (e.g. pesticides, benzene, etc.)
- Many types of leukemia
  - Gingival infiltrate assoc with *myelomonocytic* type
- Generally bone marrow involvement

Leukemic infiltrate

- Age and gender: No predilection for *acute myelomonocytic leukemia (AML)*
- Site: Gingiva
- Clinical features:

Diffuse swelling/enlargement

Boggy

Non-tender

** Ulceration of gingiva and adjacent oral mucosa due to *neutropenia*

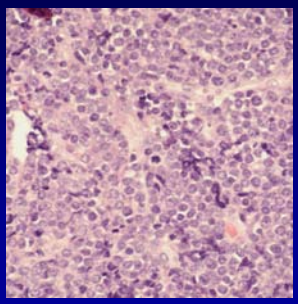
** Fatigue, fever, infection, bleeding

Leukemic infiltrate

- Differential diagnosis:
  1) Gingivitis associated with local factors
  2) Gingivitis associated with hormonal imbalance
  3) Drug-induced gingival hyperplasia
  4) Gingival fibromatosis

Leukemic infiltrate

- Histology:
  - sheets of malignant hematopoietic cells



Leukemic infiltrate

- Diagnosis:
  1) Order a complete blood count (CBC)
     - typically, *elevated WBC count*
  2) Refer to an oncologist
     - peripheral blood smear
     - bone marrow aspiration
- Treatment: Chemotherapy ± radiation therapy