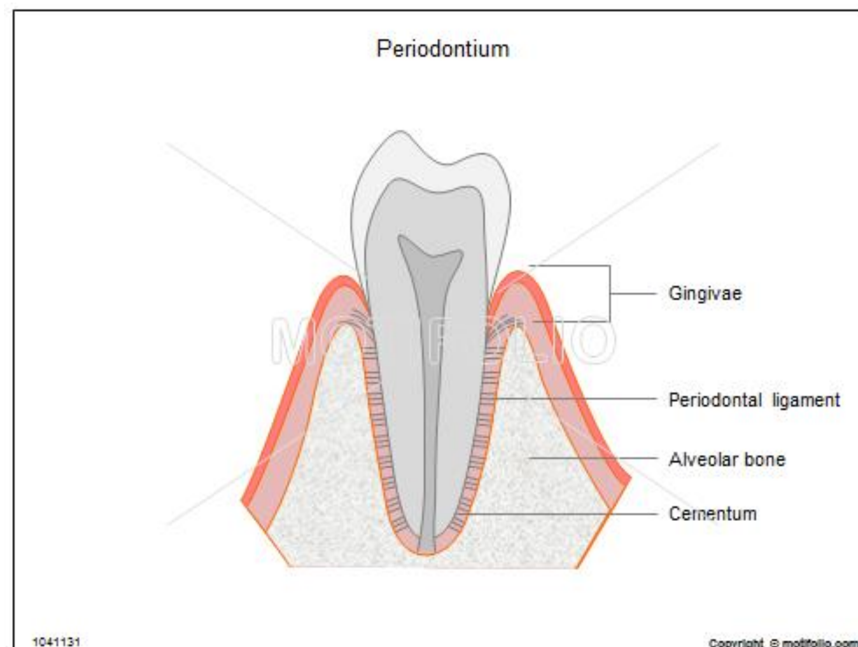
Diseases of the Periodontium

OMRD
GDCHA

- Periodontium (peri—around, odonto—tooth)
- ‘the attachment apparatus’



(1) the gingiva,
(2) the periodontal ligament,
(3) the root cementum,
(4) the alveolar bone

Function is to **attach** the tooth to jaw bone and to maintain the **integrity** of the masticatory system.

Gingiva

- A healthy gingiva is a part of the masticatory mucosa covering the alveolar process and surrounds the cervical portion of the tooth

  by snugly fitting into each interproximal space between the teeth.

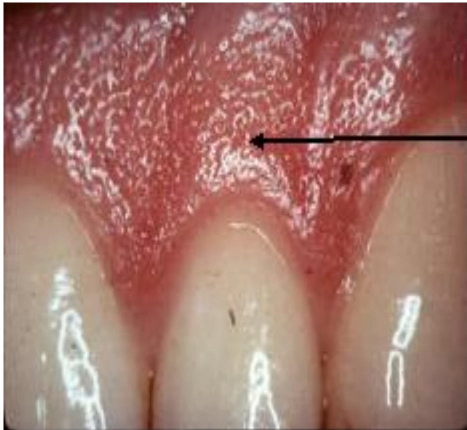
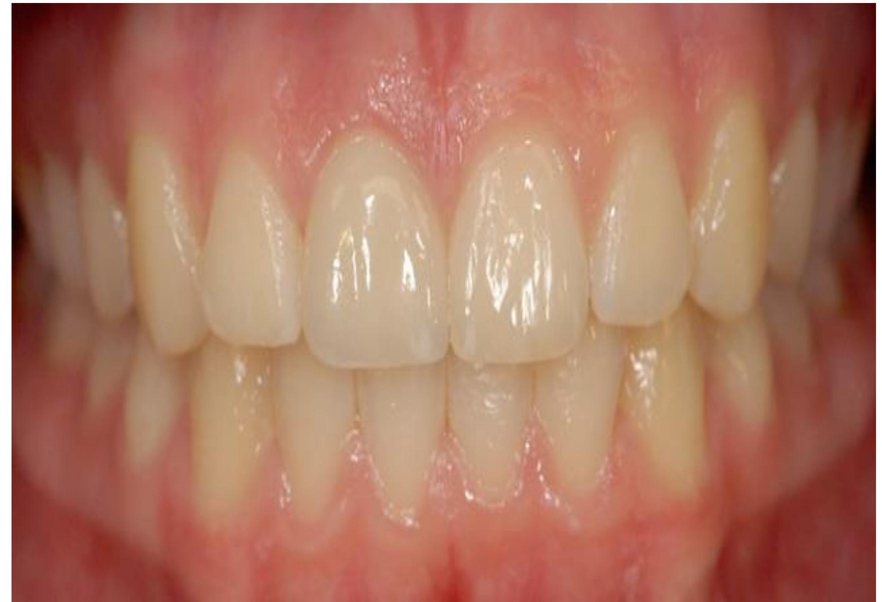


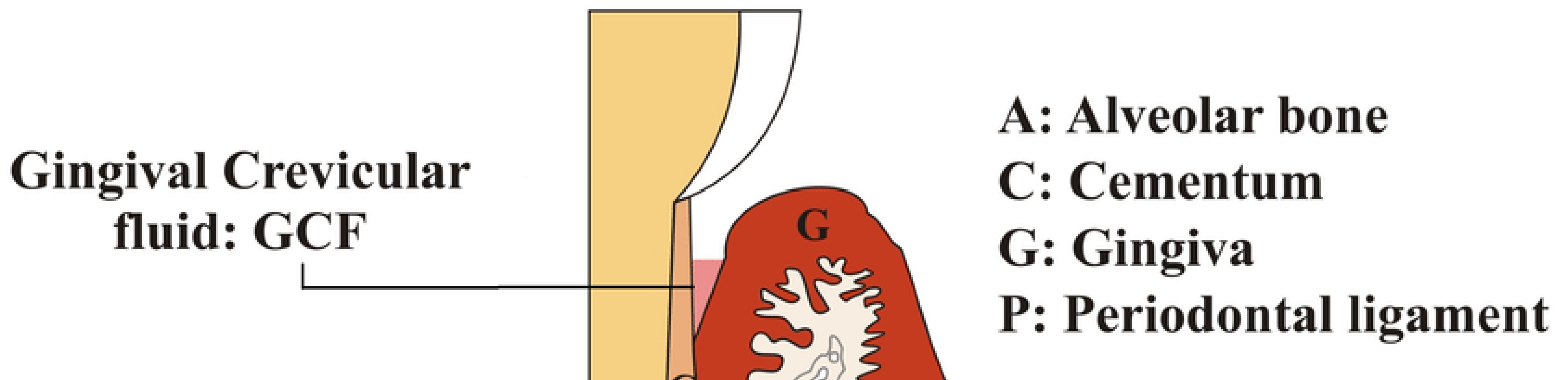
Figure 3: This picture shows the stippled/orange peel surface of the attached gingiva.



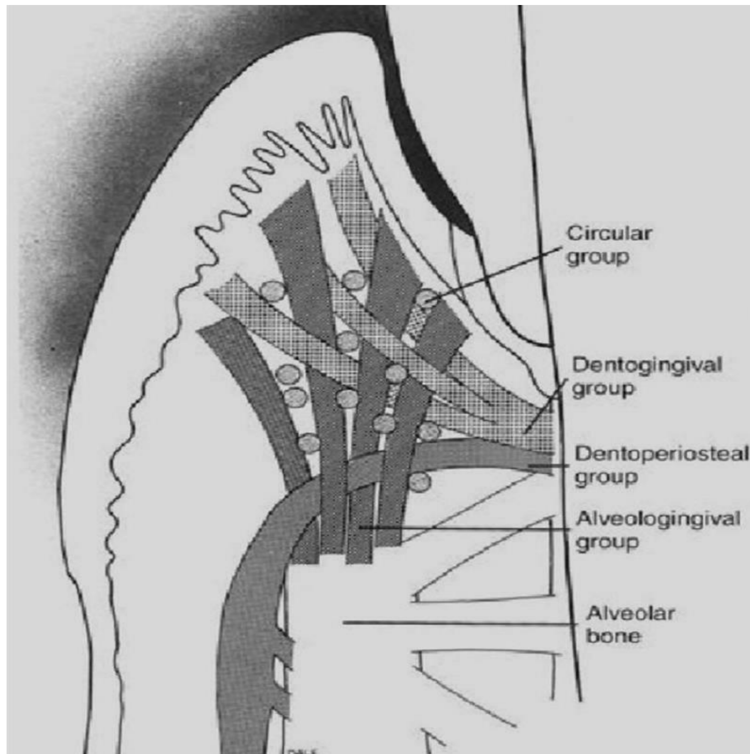
The attached gingiva and the central portion of the interdental papillae are stippled but not the marginal gingiva.

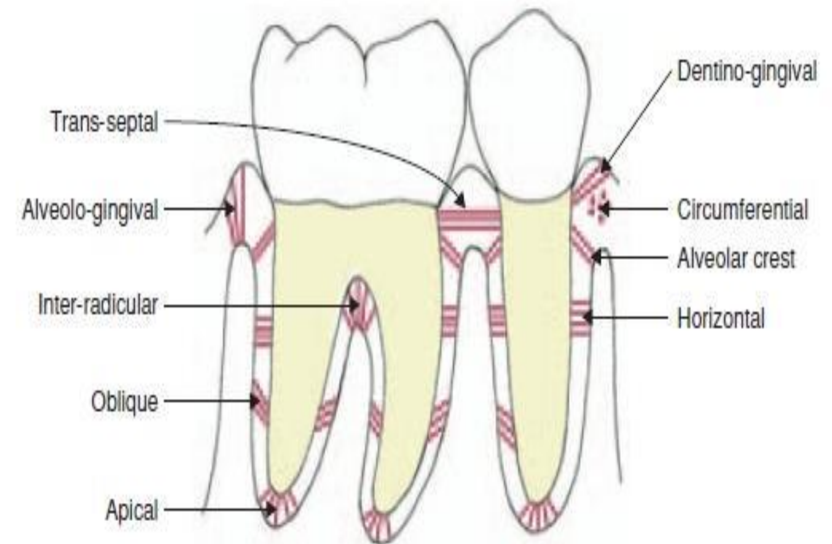
Gingival fluid (sulcular fluid)

Gingival crevicular fluid is a complex mixture made of substances derived from serum, leukocytes, cells of the tissues of periodontium, and microbial flora inhabiting the marginal gingiva or the sulcus (pocket).



Gingival fibres





1.Circular fibers
2.**Dentogingival fibers**
3.**Dentoperiosteal fibers**
4.**Alveologingival fibers**
5.**Transseptal fibers**

Periodontal Ligament

- The periodontal ligament is a soft, richly vascular, dense fibrous connective tissue and is attached to the cementum on one end and alveoloar bone on the other end and occupies the space between the root cementum and the alveolar bone proper.
- The shape of the periodontal ligament space is of an hourglass-like which is narrowest at the mid-root level. And width of the periodontal ligament ranges from 0.2 to 0.4mm.

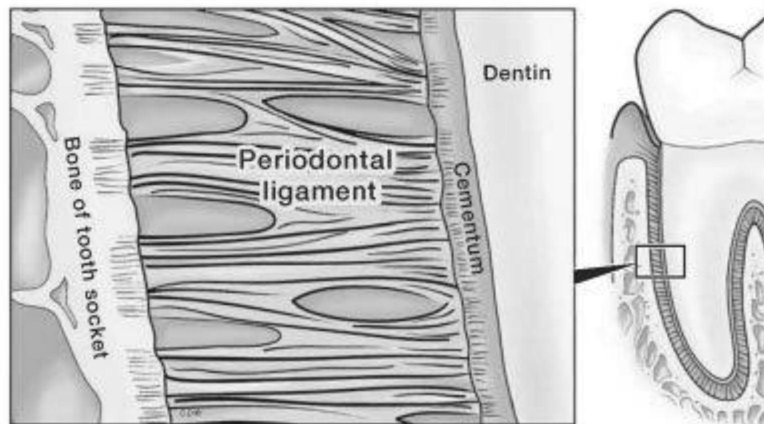
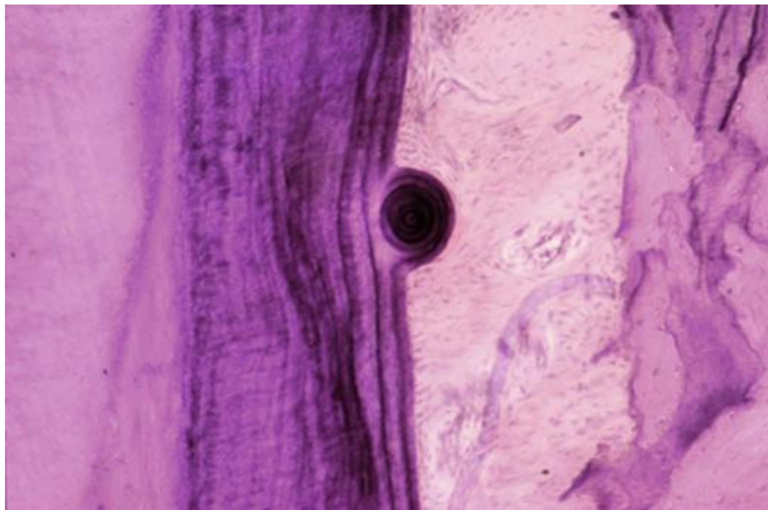


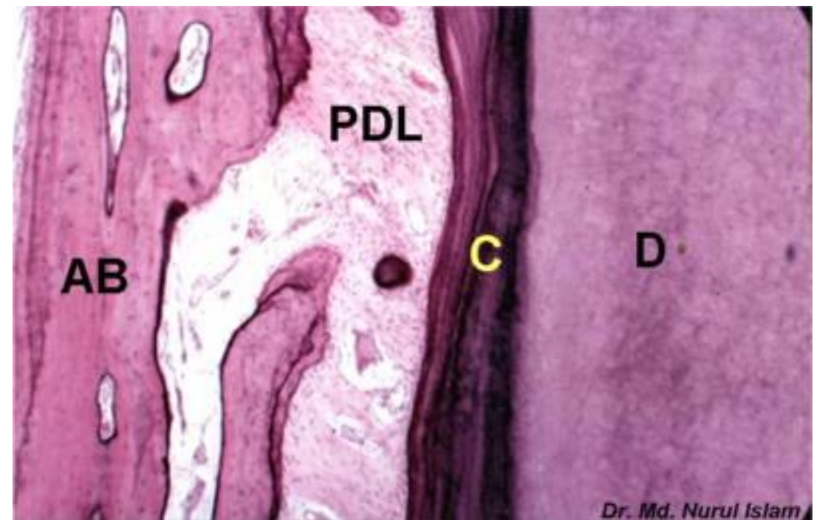
Figure 1.13. **Periodontal Ligament.**

- On the bone side, the ends of the periodontal ligament fibers are anchored in the alveolar bone of the tooth socket.
- On tooth side, the ends of the periodontal ligament fibers are anchored in the cementum of the root.

- Periodontal ligament is made up of collagen fibers, oxytalan fibers, fibroblasts, amorphous ground substance, and interstitial tissue.
- Cells of the periodontal ligament include cementoblasts, osteoblasts, osteoclasts and epithelial remnants of Malassez(calcified-cementicles).



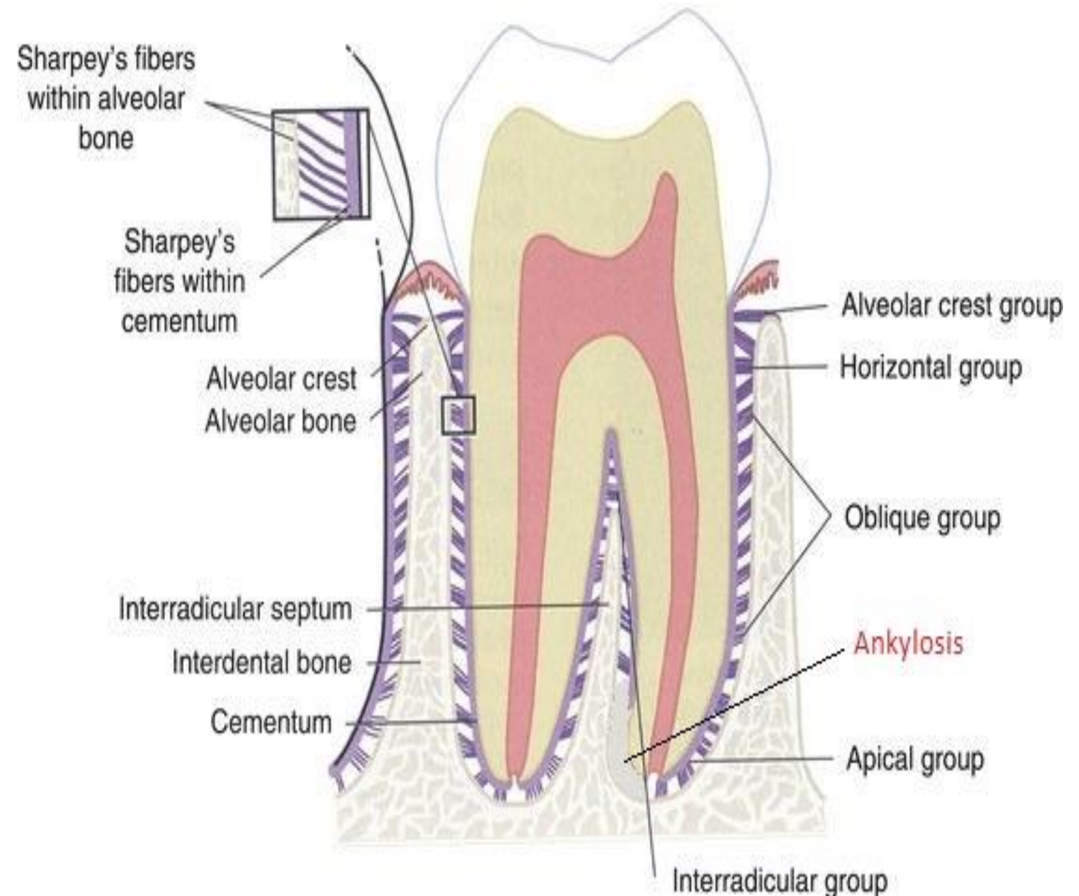
Attached cementicle to the wall of cementum



Unattached cementicle within the PDL

Principal Fibers Of The Periodontal Ligament

1.Alveolar crest group
2.Horizontal group
3.Oblique group
4.Apical group
5.Interradicular group

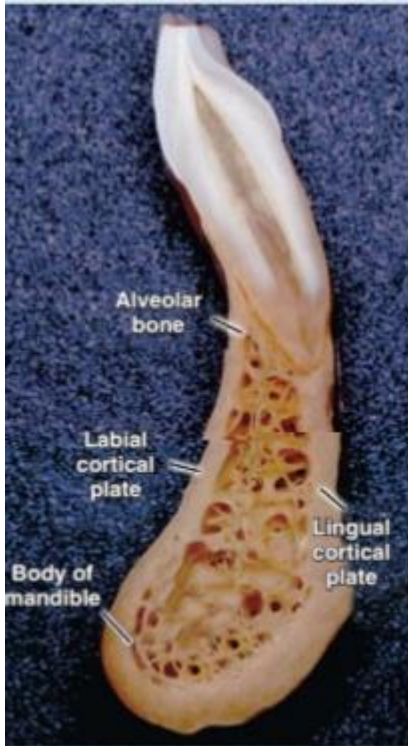


PDL functions

- It's the tissue of attachment between teeth and alveolar bone.
- It helps teeth to attain then maintain it's functional position.
- It's cells form,maintain and repair cementum and alveolar bone .
- It's mechanoreceptors are involved in the neurological control of mastication.

Alveolar Bone

Alveolar process is the part of the maxilla and the mandible containing the sockets, which protects and supports the tooth.



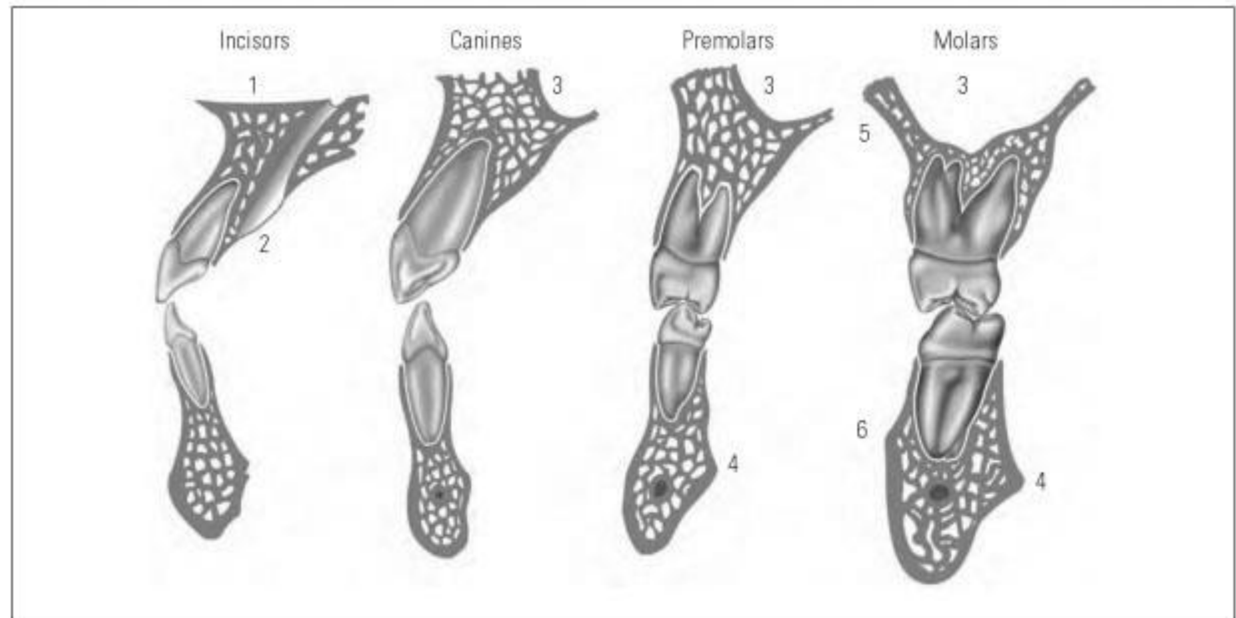


Fig 3-21 The position of the teeth in the alveolar bone and the distribution of the bone tissue in the area of the vestibular and lingual alveolar crest. 1, nasal cavity; 2, incisal canal; 3, maxillary sinus; 4, mylohyoid line; 5, subzygomatic crest; 6, oblique line.

The main function is to distribute and resorb forces generated by mastication.

Classification of Periodontal Disease

Gingival diseases

- Plaque induced gingival disease
- Nonplaque induced gingival lesions

Chronic periodontitis

- Localized
- Generalized

Aggressive periodontitis

- Localized
- Generalized

Periodontitis as a manifestation of systemic disease

Necrotizing periodontal disease

- Necrotizing ulcerative gingivitis (NUG)
- Necrotizing ulcerative periodontitis (NUP)

Abscesses of periodontium

Gingival abscess

Periodontal abscess

Pericoronal abscess

Periodontitis associated with endodontic lesions

Endodotic – periodontal lesion

Periodontal – endodontic lesion

Combined lesion

Developmental or acquired deformities and conditions

Localized tooth related factors that predispose to plaque induced gingival diseases or periodontitis

Mucogingival deformities and conditions around teeth

Mucogingival deformities and conditions on edentulous ridges

Occlusal trauma

Dental Plaque–Induced Gingival Diseases-These diseases may occur on a periodontium with no attachment loss or on a periodontium with attachment loss that is stable and not progressing.

I. Gingivitis associated with dental plaque only

A. Without local contributing factors

B. With local contributing factors

II. Gingival diseases modified by systemic factors

A. Associated with endocrine system

1. Puberty-associated gingivitis
2. Menstrual cycle–associated gingivitis
3. Pregnancy associated

a. Gingivitis

b. Pyogenic granuloma

4. Diabetes mellitus–associated gingivitis

B. Associated with blood dyscrasias

1. Leukemia-associated gingivitis
2. Other

III. Gingival diseases modified by medications

A. Drug-influenced gingival diseases

1. Drug-influenced gingival enlargements
2. Drug-influenced gingivitis

a. Oral contraceptive–associated gingivitis

b. Other

IV. Gingival diseases modified by malnutrition

A. Ascorbic acid deficiency gingivitis

B. Other

Based on etiology

*M.Flora–**Plaque-Induced Gingival Lesions***

I. **Gingival diseases of specific bacterial origin**

A. Neisseria gonorrhoeae

B. Treponema pallidum

C. Streptococcus species

D. Other

II. **Gingival diseases of viral origin**

A. Herpesvirus infections

1. Primary herpetic gingivostomatitis
2. Recurrent oral herpes
3. Varicella zoster

B. Other

III. **Gingival diseases of fungal origin**

A. Candida species infections: generalized gingival candidiasis

B. Linear gingival erythema

C. Histoplasmosis

D. Other

IV. Gingival lesions of genetic origin
A. Hereditary gingival fibromatosis
B. Other
V. Gingival manifestations of systemic conditions
A. Mucocutaneous lesions
1. Lichen planus
2. Pemphigoid
3. Pemphigus vulgaris
4. Erythema multiforme
5. Lupus erythematosus
6. Drug induced
7. Other
B. Allergic reactions
1. Dental restorative materials
a. Mercury
b. Nickel
c. Acrylic
d. Other
2. Reactions attributable to:
a. Toothpastes or dentifrices
b. Mouth rinses or mouthwashes
c. Chewing gum additives
d. Foods and additives
3. Other

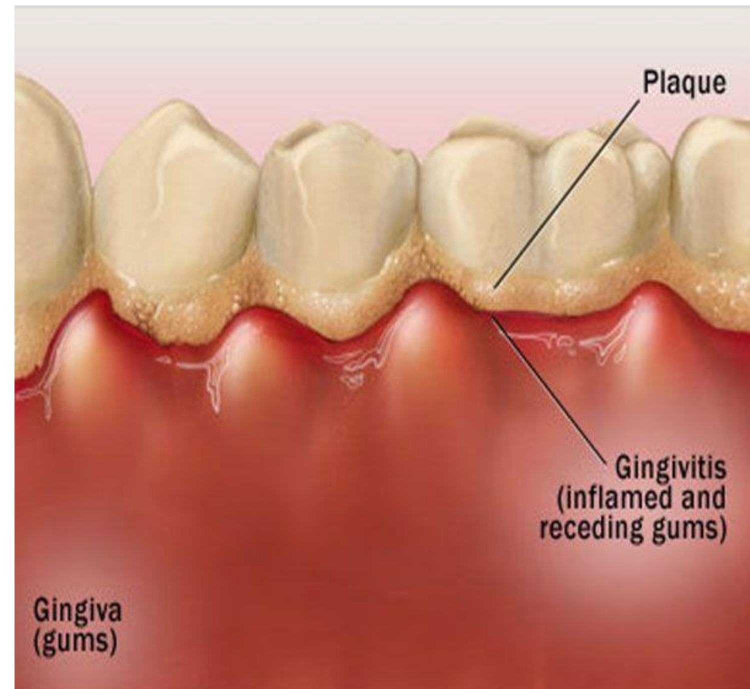
VI. Traumatic lesions (factitious, iatrogenic, or accidental)
A. Chemical injury
B. Physical injury
C. Thermal injury
VII. Foreign body reactions
VIII. Not otherwise specified

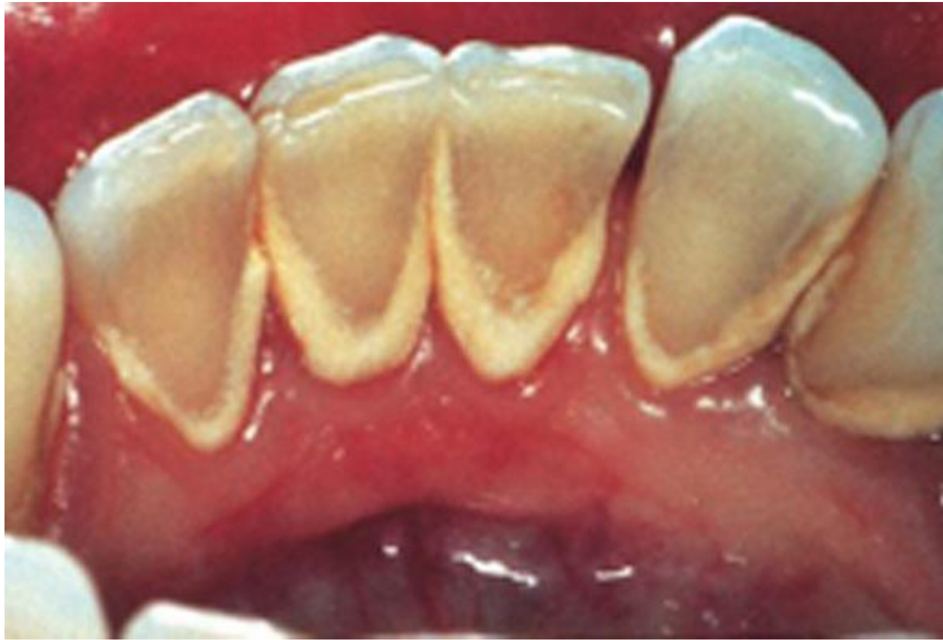
Gingival Diseases

Gingival diseases are broadly classified into dental **plaque induced** and **nonplaque induced**.
Plaque induced gingival diseases
•local factors and
•local factors modified by the specific systemic factors of the host.

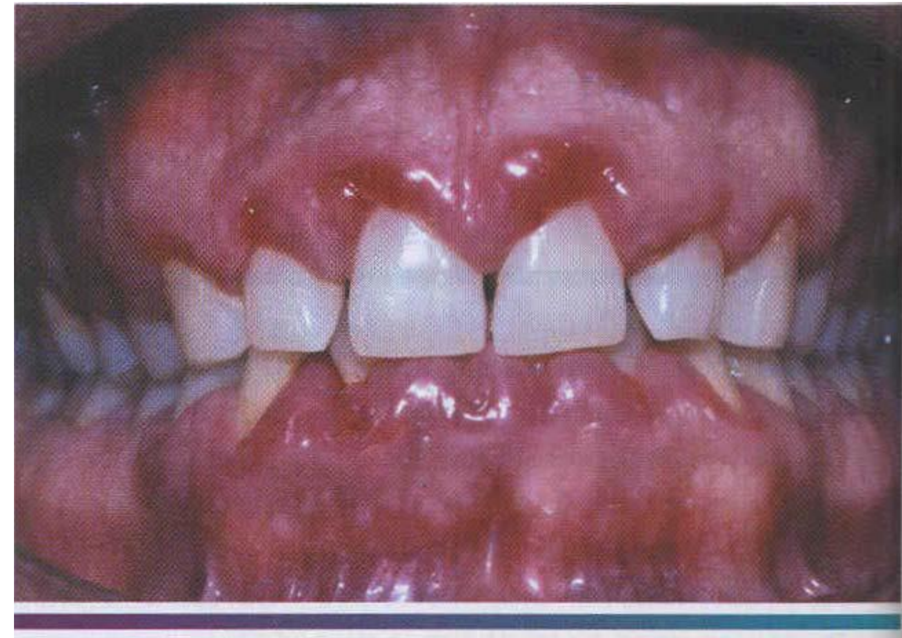
Local factors

1. Microorganisms
2. Calculus
3. Food impaction
4. Faulty or irritating restorations or appliances
5. Mouth breathing
6. Tooth malposition

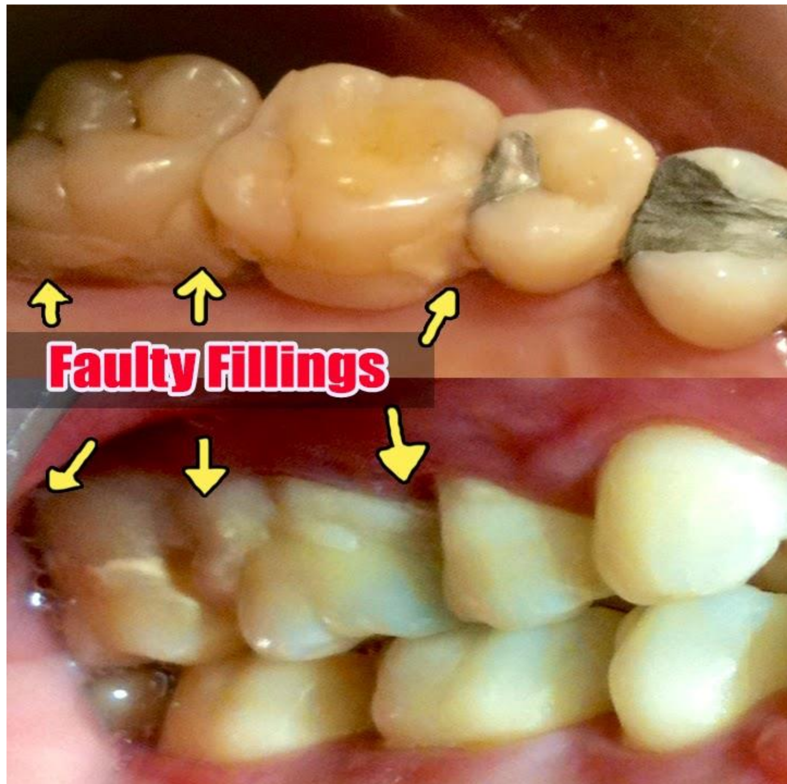


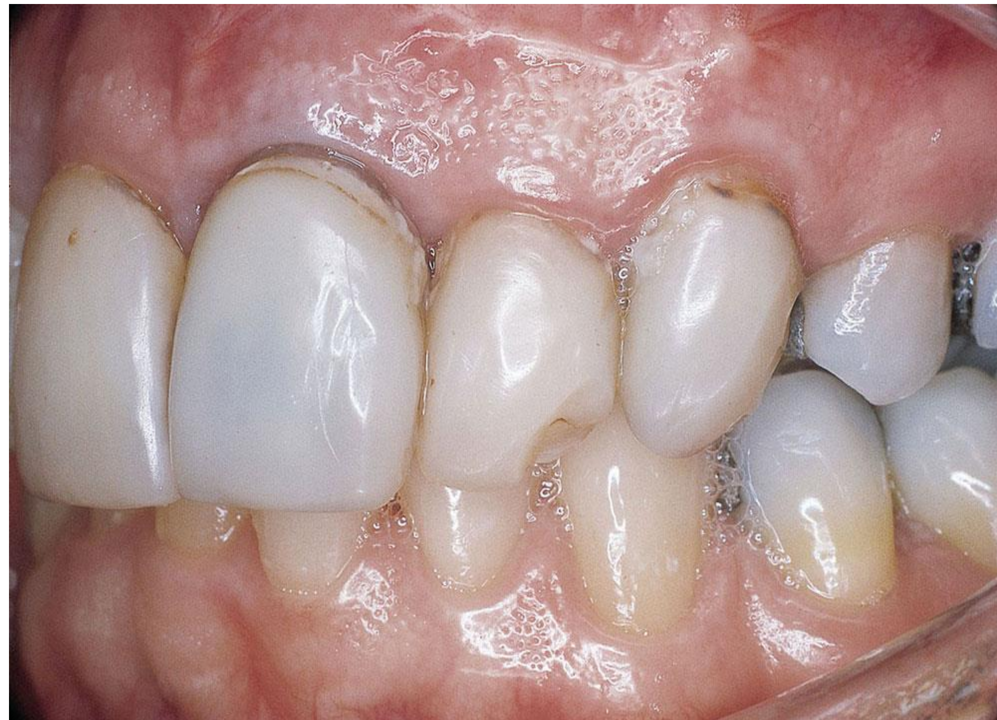


Calculus deposited irt lingual surface of lower anteriors causing chronic irritation and inflammation

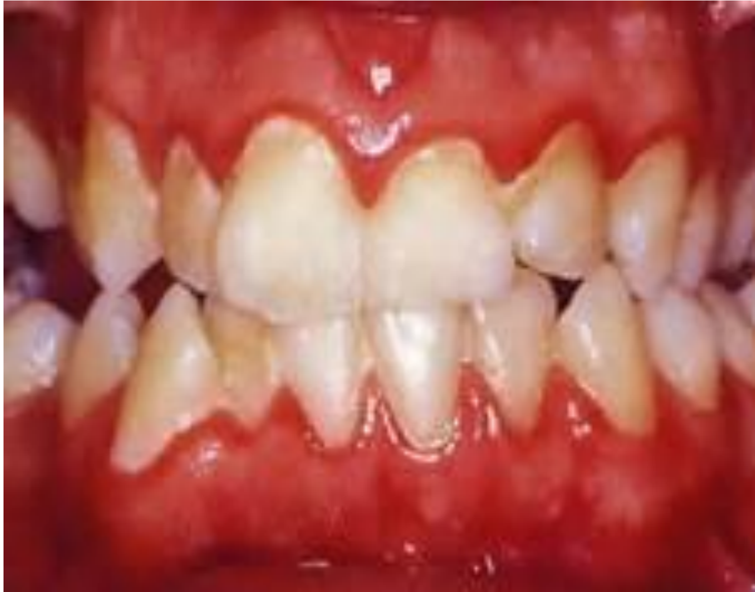


Mouth breathing-related gingivitis. Slick, swollen,and red gingivitis of the anterior facial gingiva secondary to chronic mouth breathing

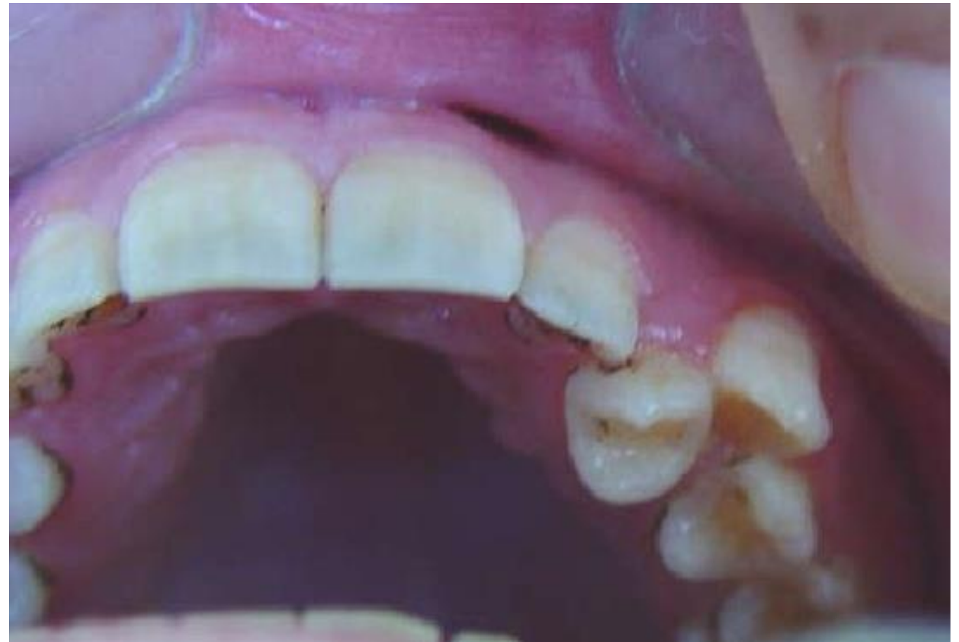




Faulty or irritating restorations or appliances



Crowding of lower anteriors causing plaque accumulation leading to chronic inflammation of gingivae



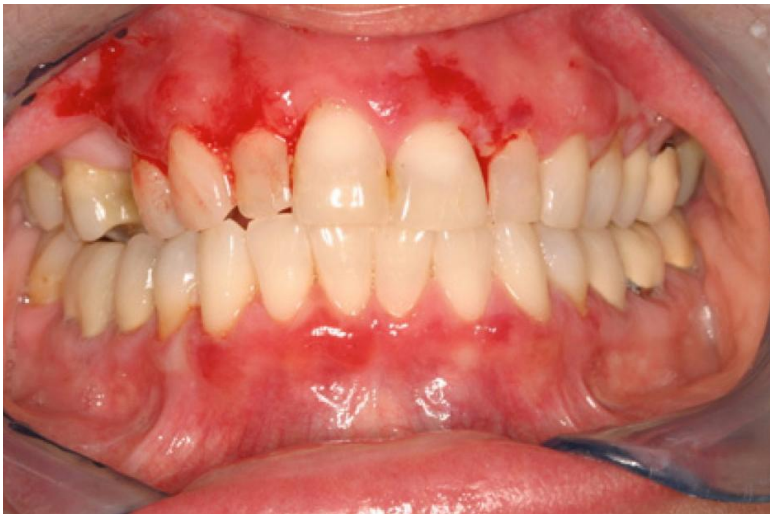
Transposition of canine causing inadequate oral hygiene maintenance

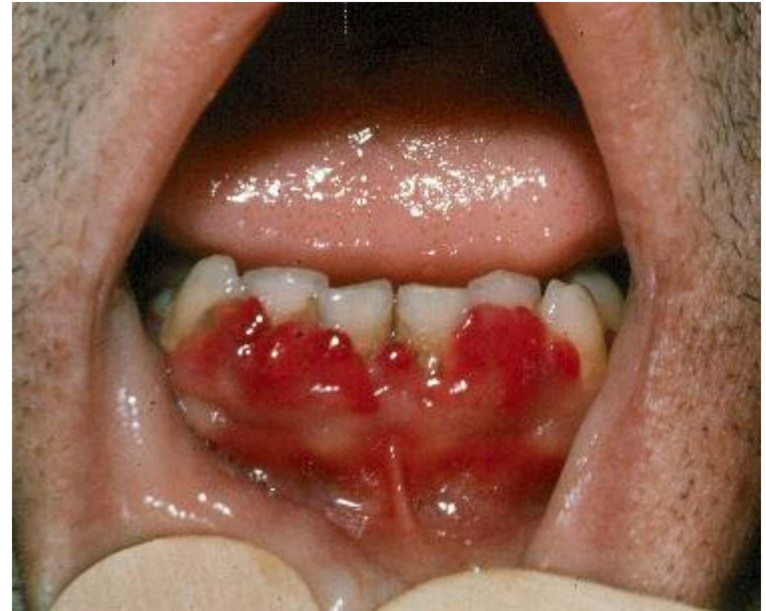
SYSTEMIC FACTORS

Nutritional Deficiency

In Scurvy which results from Vitamin C deficiency, interdental and marginal gingiva is bright red with a swollen, smooth and shiny surface. In fully developed scurvy, the gingiva becomes boggy, ulcerates and bleeds with foul smell.

In Pellagra-Niacin deficiency, tenderness, pain, redness and ulcerations begin at the interdental papillae which spread rapidly in the oral cavity with profuse salivation.

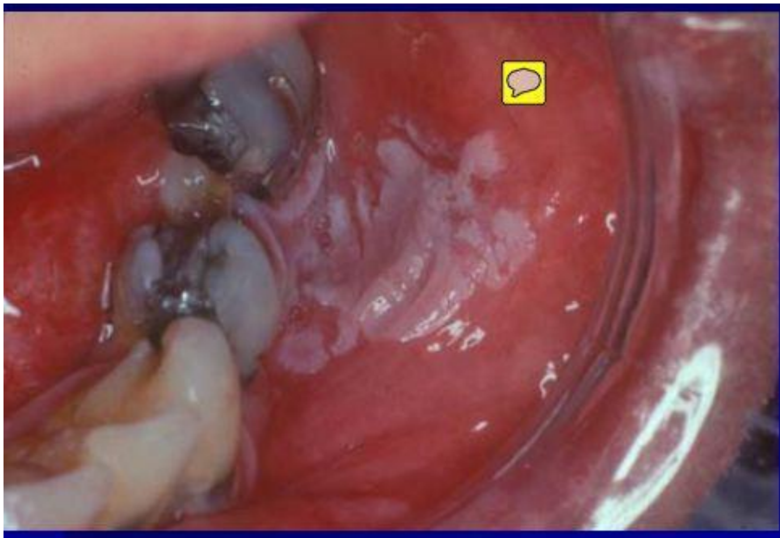


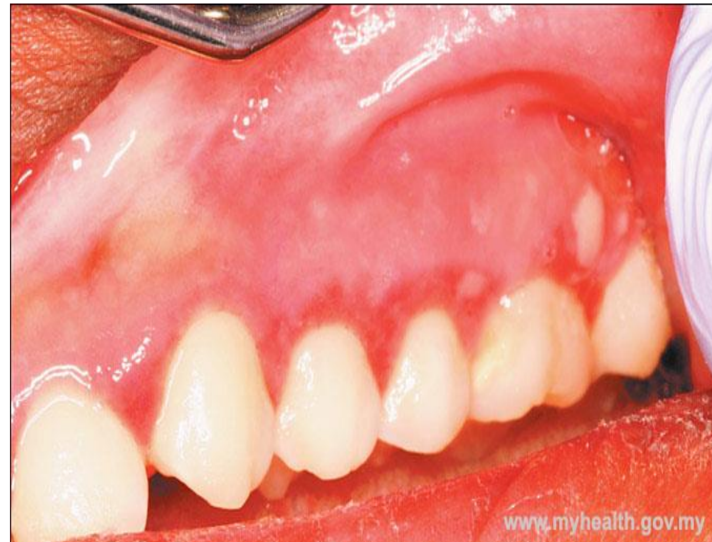


Scorbutic gingivitis

Drug action-

Many drugs are potentially capable of inducing gingivitis, particularly an acute case of gingivitis, owing to a direct local or systemic irritating action.
For example, phenol, silver nitrate, volatile oils, or aspirin, if applied to the gingiva, will provoke an inflammatory reaction.

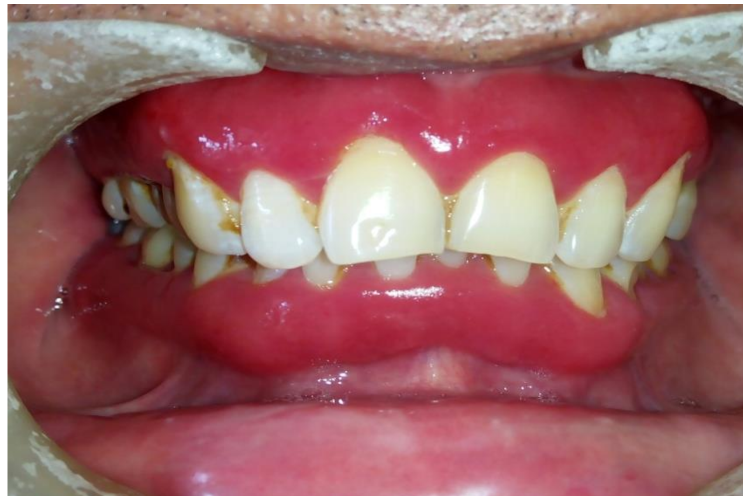




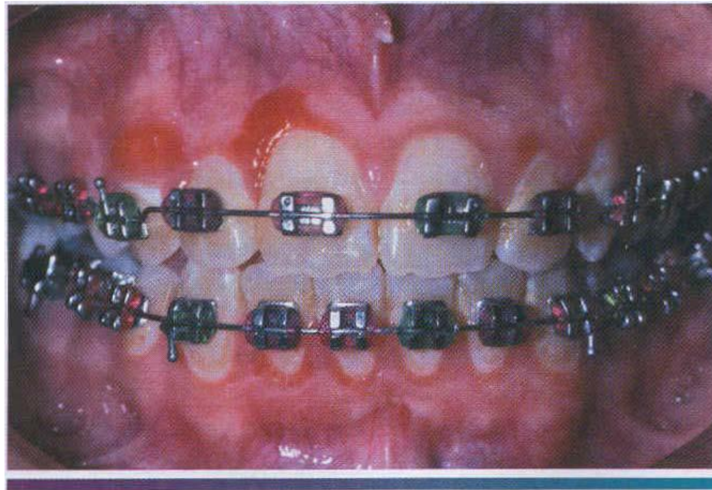
Allergic -plasma cell gingivitis

Plasma cell gingivitis is a rare condition, appearing as generalized erythema and of the attached gingiva, occasionally accompanied by cheilitis or glossitis.

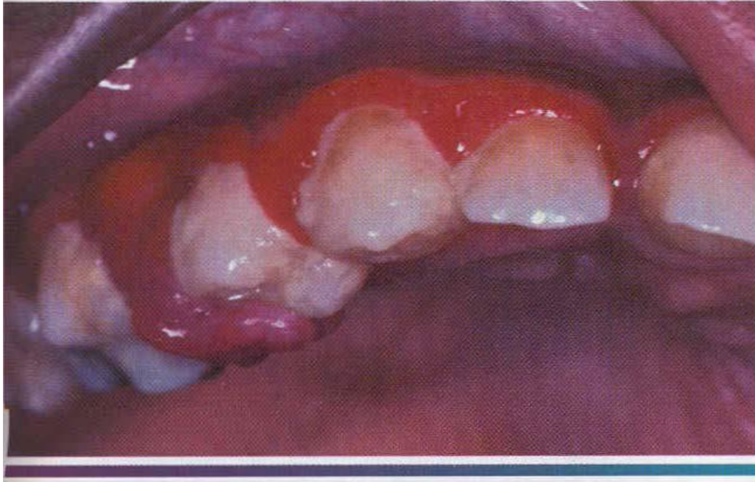
Hypersensitivity reactions to some antigen- Possible sources ingredients in toothpastes, chewing gum, mints, pepper, or foods. Specifically, cinnamon aldehyde and cinnamon

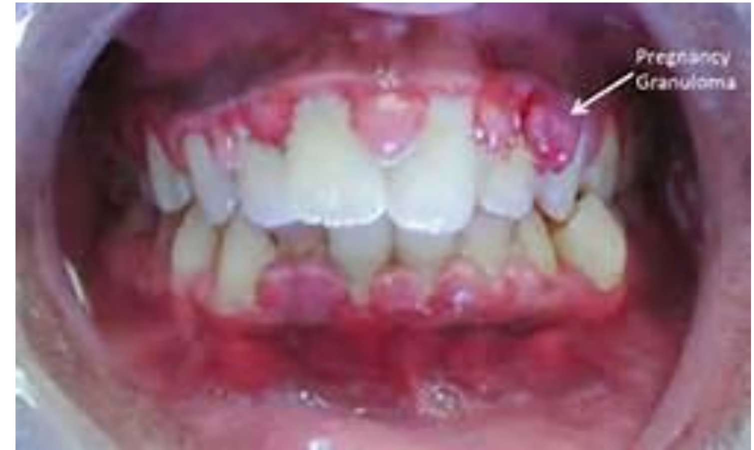


Endocrine changes associated with puberty, pregnancy, menstrual cycle, and diabetes mellitus



Gingivitis is reported to occur with some frequency in puberty as the so-called puberty gingivitis. The gingiva appears hyperemic and edematous.



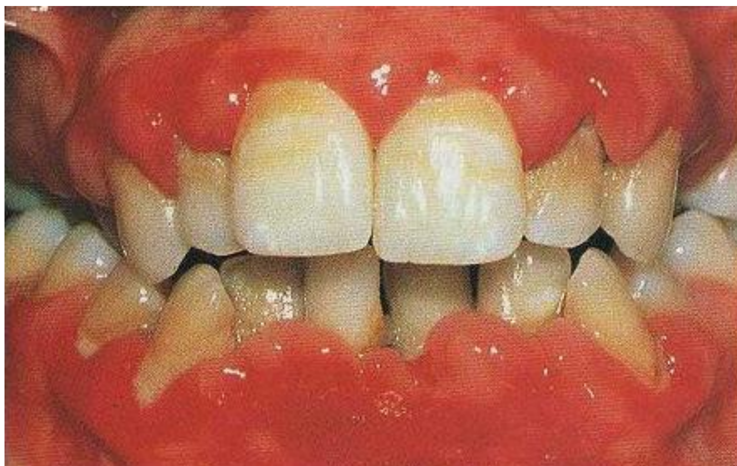


•Gingivitis in the pregnant woman varies from an unchanged to a smooth,shiny, deeply reddened marginal gingiva with frequent focal enlargement, and intense hyperemia of the interdental papilla.

•Occasionally, a single tumor like mass will develop, the ‘pregnancy tumor,’ which is histologically identical with pyogenic granuloma

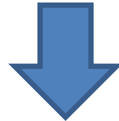
Diabetes and Periodontium

- Hyperglycemia results in **increased gingival crevicular fluid glucose levels**, alter periodontal wound healing events by changing the interaction between cells and their extracellular matrix within the periodontium.
- **Microvascular changes** are the hallmark of many diabetic complications. In individuals with sustained hyperglycemia , proteins become irreversibly glycated to form advanced glycation end products(AGEs).
- Diabetes results in **changes in the function of host defense cells** such as polymorphonuclear leukocytes (PMNs), monocytes,and macrophages. PMN adherence, chemotaxis, and phagocytosis are impaired.

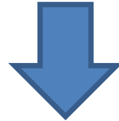


Generalised inflammation, abnormal gingival anatomy owing to tissue destruction, gingival recession, swelling and inflammation, spontaneous bleeding

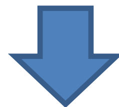
Formation of AGEs -collagen accumulation in the periodontal capillary basement membranes



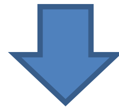
Causing membrane thickening



Decrease tissue perfusion and oxygenation



Atheroma formation



Further narrowing of the vessel lumen

alter the tissue response to periodontal pathogens, resulting in increased tissue destruction and diminished repair potential

- **Psychiatric disturbances** appear to have a definite influence upon the severity of periodontal disease.
- Belting and Gupta reported that the severity of periodontal disease was significantly greater in psychiatric patients than in a controlled group of patients.
- Significant differences in severity were noted even when such variable factors as amounts of calculus, brushing frequency and bruxism were held constant in the two groups.
- The severity of periodontal disease increased significantly as the degree of anxiety increased.
- It was also noted that the severity of periodontal disease decreased significantly in both normal and psychiatric groups as the educational level of the patient increased.

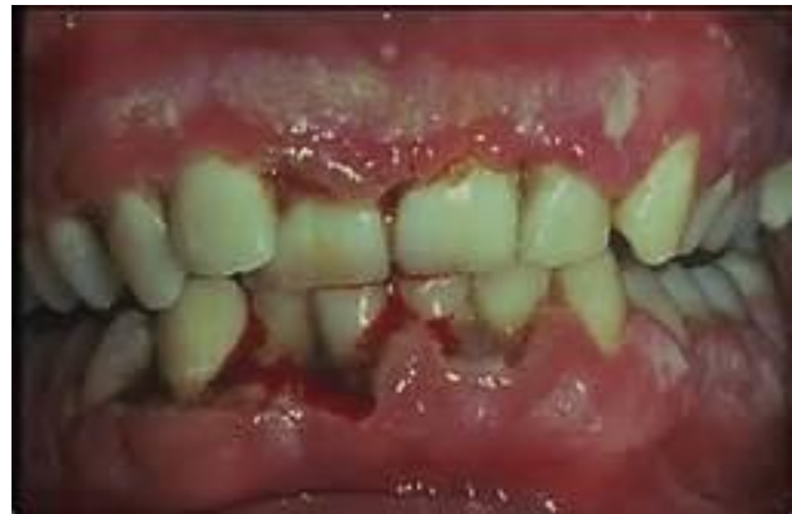
- **Radiographic Features**
- Chronic gingivitis, in which the inflammation is limited strictly to the gingiva, does not manifest changes in the underlying bone

Treatment and Prognosis

- If the irritants are removed at this stage, the inflammation with its attendant swelling due to hyperemia, edema, and leukocytic infiltration will disappear within a matter of hours or a few days, leaving no permanent damage.
- careful early treatment followed by proper brushing of teeth and frequent prophylaxis.
- chemical plaque control measures such as using mouthwashes containing chlorhexidine, listerine or triclosan.
- If there is poor response to good local therapy, a search should be made for **systemic factors**, which might be complicating the case.
- History regarding use of local drug application and adequate oral hygiene maintenance
- Evaluation of Complete blood indices and systemic history
- Mouth breathers- Advised to stop the habit
- Correction of Faulty restorations or prosthesis
- Scorbutic gingivitis-Supplementation of Vit C in diet

Necrotizing Gingivostomatitis

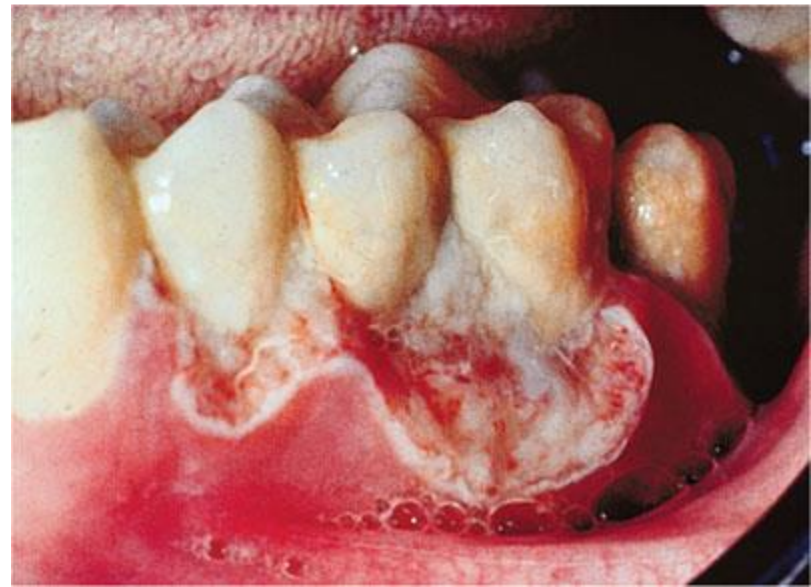
- *Vincent's infection,*
- *trench mouth,*
- *acute ulceromembranous gingivitis,*
- *phagedenic gingivitis,*
- *fusospirochetal gingivitis,*
- *Acute ulcerative gingivitis*



- This inflammatory condition involves primarily the free gingival margin, the crest of the gingiva, and the interdental papillae.
- On rare occasions the lesions spread to the soft palate and tonsillar areas, and in such instances the term **Vincent’s angina has been applied.**
- **Pain,** interdental ulceration, and gingival bleeding are considered to be the diagnostic triad.
- A typically heavy, necrotic membrane covers the gingival tissues of the anterior teeth in this severe case

- more common among young and middle-aged adults. In developing countries, it is seen almost exclusively in children, related to poverty and malnutrition.
- **Etiology**
- It is an endogenous, polymicrobial infection causing destructive inflammation due to the coexistence of several predisposing factors. Most investigators believe that necrotizing ulcerative gingivitis is caused by a ***fusiform bacillus and Borrelia vincentii****—a spirochete.*
- **Predisposing Factors**
- Psychological stress plays an important role in the development of necrotizing ulcerative gingivitis,
- immunosuppression, smoking, upper respiratory tract infection, local trauma, poor nutritional status, and poor oral hygiene.
- HIV-positive persons suffer from a severe form of necrotizing ulcerative gingivitis as the immune function deteriorates

- painful, **hyperemic gingiva** and sharply **punched-out crater like erosions of the interdental papillae** of sudden onset
- The ulcerated remnants of the papillae and the free gingiva bleed when touched and generally become covered by a grayish green, necrotic pseudomembrane
- The patient usually suffers from headache, malaise, and a low-grade fever.
- Excessive salivation with the presence of a metallic taste to the saliva is often noted, and regional lymphadenopathy



Treatment Plan

First Visit

- At the initial visit, the gingivae should be gently **débrided** with both irrigation and periodontal curettage.
- Complete débridement may not be possible on the first visit because of soreness.

- **After the first visit,**
- Patients should be made aware of the significance of such factors as poor oral hygiene, smoking, and stress.
- Antibiotics are usually not necessary for routine cases of ANUG confined to the marginal and interdental gingivae.
- These cases can be successfully treated with local débridement, irrigation, curettage, and home care instruction including **hydrogen peroxide (approximately 1.5 to 2% in water)** mouth rinses three times a day and **chlorhexidine .12%** rinses.
- Antibiotics should be prescribed for patients with extensive gingival involvement, lymphadenopathy, or other systemic signs, and in cases in which mucosa other than the gingivae is involved.
- Metronidazole and penicillin are the drugs of choice in patients with no history of sensitivity to these drugs.

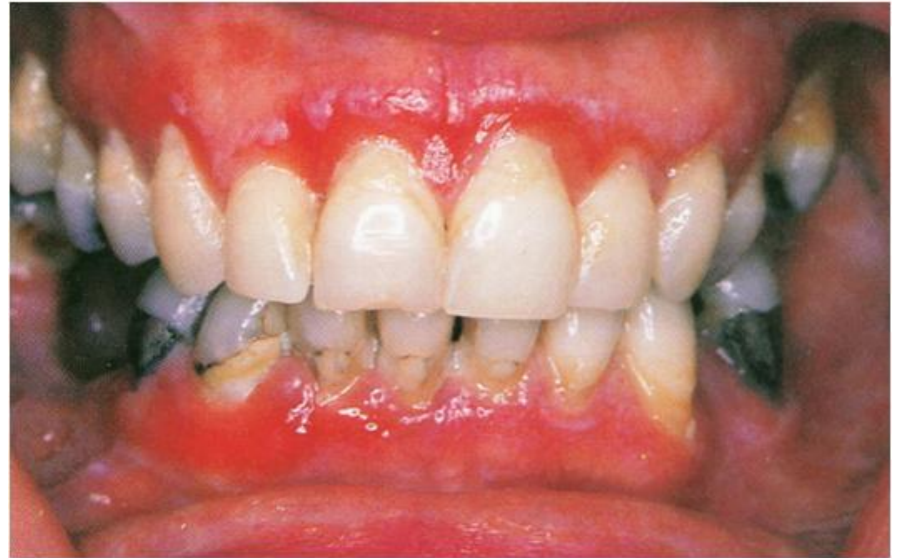
- Patients whose lesions have extended from the gingivae to the buccal mucosa, tongue, palate, or pharynx should be placed on antibiotics and should have appropriate studies to rule out blood dyscrasias or AIDS.
- The patient must be made aware that, unless the local etiologic factors of the disease are removed, ANUG may return or become chronic and lead to periodontal disease.

Desquamative Gingivitis

- Desquamative gingivitis is not a disease entity but a clinical term used for many years to describe a unique condition of the gingiva characterized by intense redness and desquamation of the surface epithelium.
- sometimes also called ‘gingivosis’
- **Etiology** McCarthy and his colleagues proposed a classification of desquamative gingivitis based on etiology.
- Certain dermatoses
- Hormonal influences
- Abnormal responses to irritation
- Chronic infections
- Idiopathic

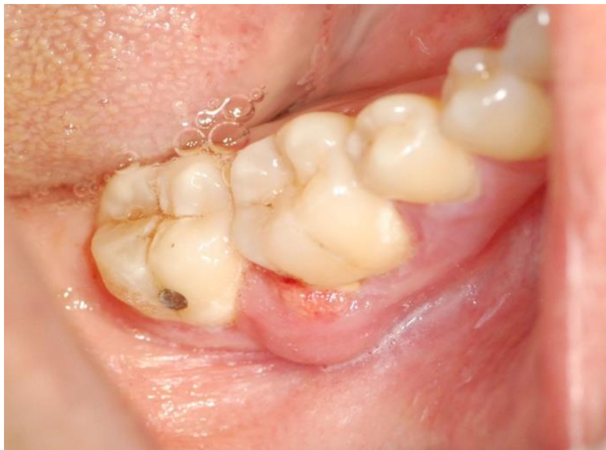
- The most important dermatoses presenting oral findings categorized as a desquamative gingivitis are:
- Cicatricial pemphigoid (benign mucous membrane pemphigoid)
- Pemphigus
- Lichen planus.
- Other diseases such as

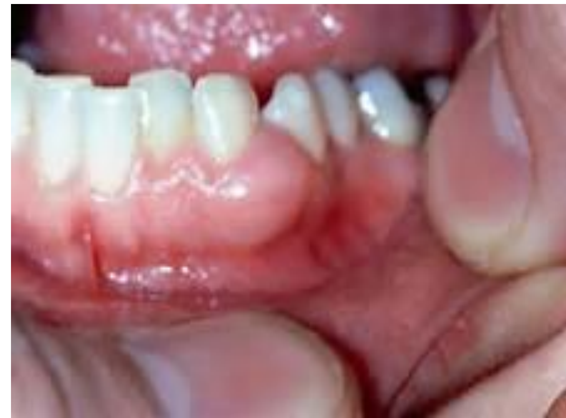
pemphigus vulgaris, epidermolysis bullosa, systemic lupus erythematosus, and linear IgA disease may also have gingival involvement, presenting as desquamative gingivitis.



Gingival Abscess

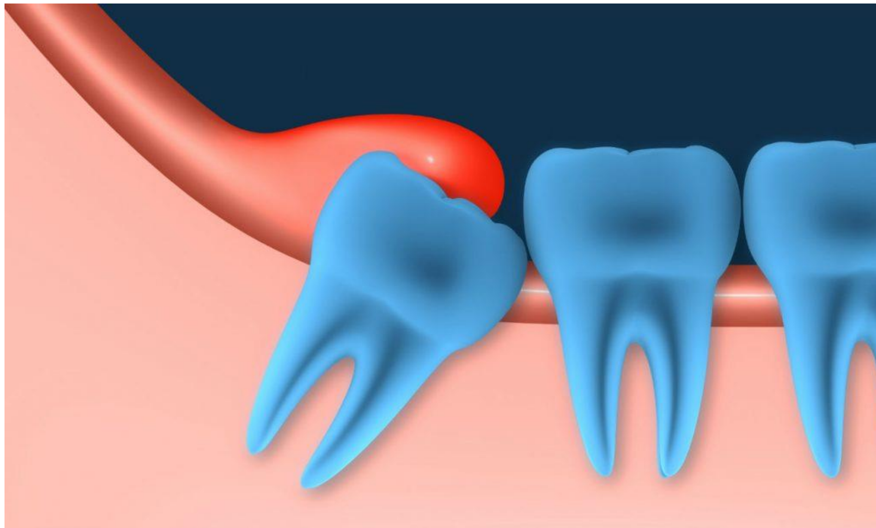
- Gingival abscess is an acute, localized, and painful lesion of sudden onset. It is caused by sudden forceful penetration of any foreign objects such as a bristle of a toothbrush or an apple core, which carry bacteria deep into the gingival tissue.

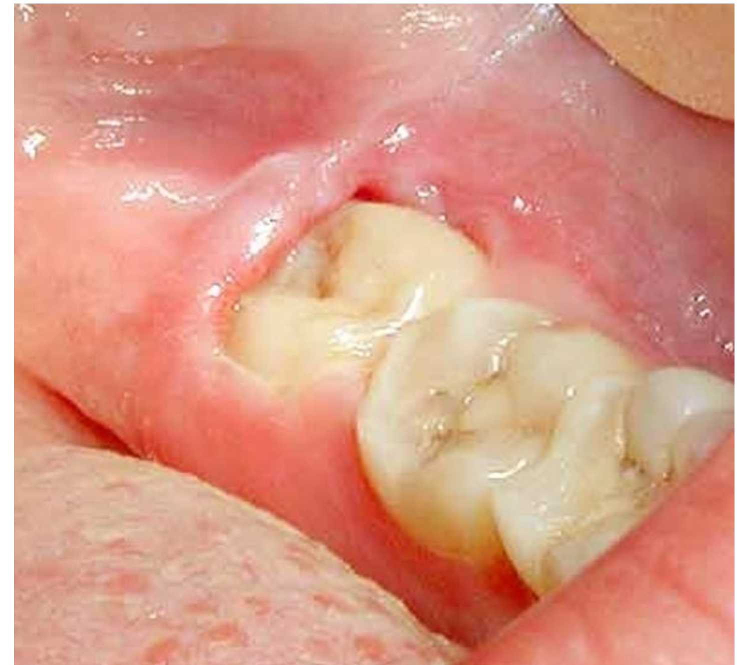




Pericoronitis

- Pericoronitis is an inflammatory lesion occurring around the impacted or partially erupted tooth. Incomplete eruption of the tooth provides a large stagnation area for food debris under the gingival flap.





Gingival Enlargement

- The gingival tissues in the healthy adult completely, though barely, fill the interproximal spaces between teeth, beginning near the contact area and extending apically and laterally in a smooth curve.
- frequently an increase in the size of the gingiva so that soft tissue overfills the interproximal spaces, balloons out over the teeth and protrudes into the oral cavity.
- The enlargement of the gingiva may be localized to one papilla or may involve several or all of the gingival papillae throughout the mouth.
- The enlargement is usually more prominent on the **labial and buccal surfaces**, although it does occasionally develop in the lingual gingiva.
- It does not involve the vestibular mucosa.

Classification

I. Inflammatory enlargement

Chronic

Acute

II. Drug-induced enlargement

Ill. Enlargements associated with systemic diseases or conditions

A. Conditioned enlargement

- Pregnancy
- Puberty
- Vitamin C deficiency
- Plasma cell gingivitis
- Nonspecific conditioned enlargement (pyogenic granuloma)

B. Systemic diseases causing gingival enlargement

I. Leukemia

2. Granulomatous diseases (e.g., Wegener's granulomatosis, sarcoidosis)

IV. Neoplastic enlargement (gingival tumors)

A. Benign tumors

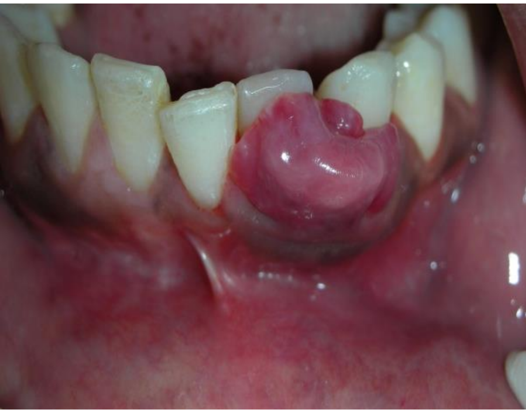
B. Malignant tumors

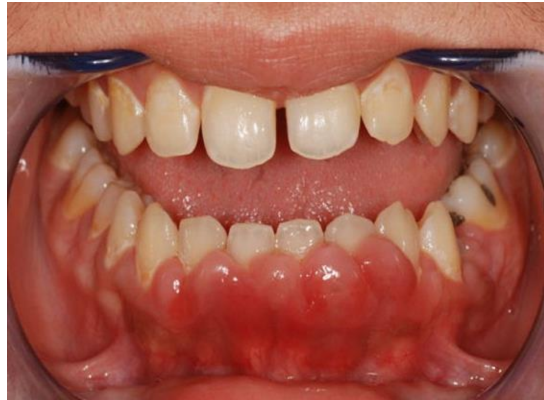
V. False enlargement

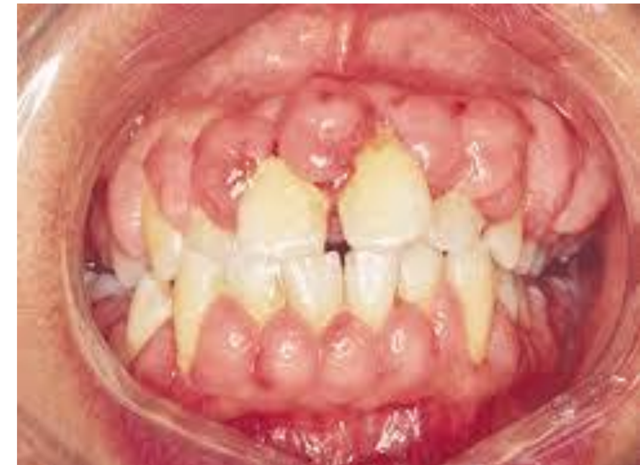
Underlying Osseous Lesions

Underlying Dental Tissues

Using the criteria of location and distribution, gingival enlargement is designated as follows:

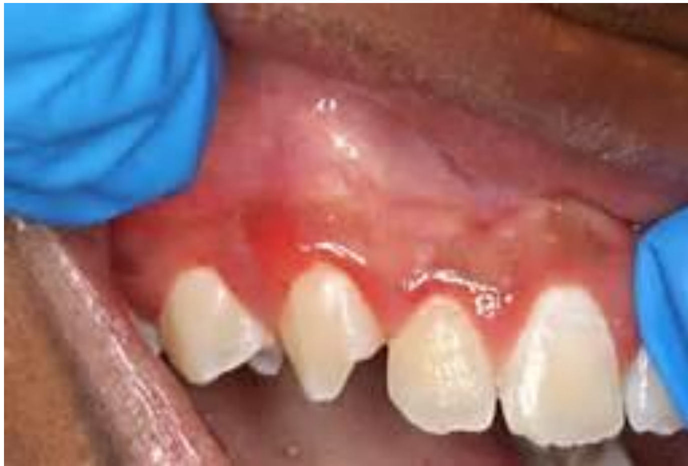




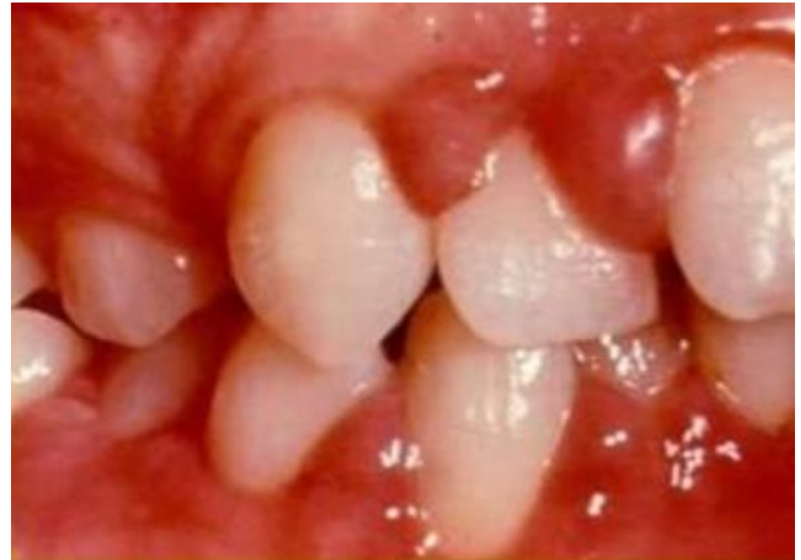


***Localized**: Limited to the gingiva adjacent to a single* tooth or group of teeth.

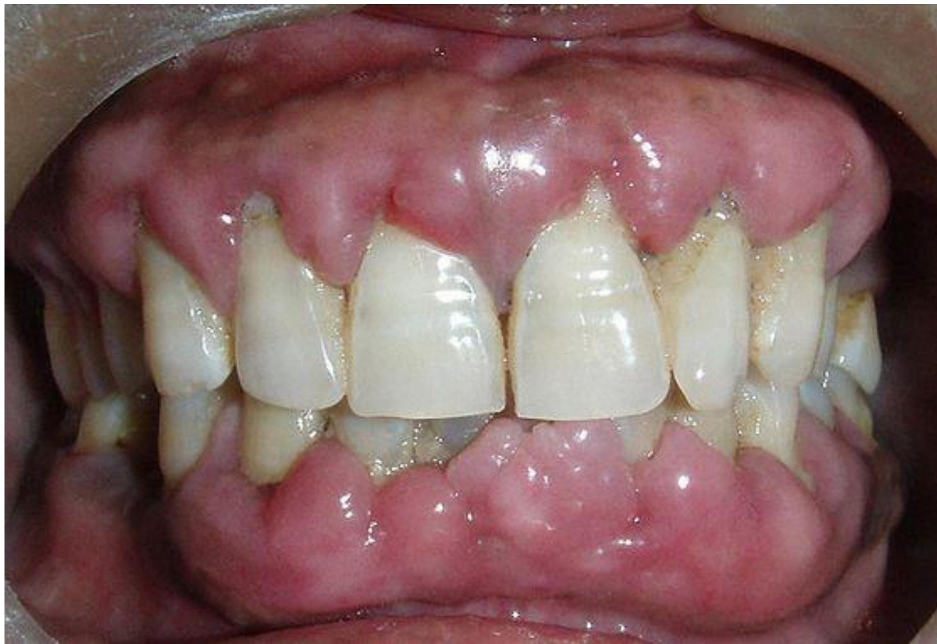
***Generalized**: Involving the gingiva throughout the mouth*



***Marginal**: Confined to the marginal gingiva*



***Papillary**: Confined to the interdental papilla*



Diffuse*: Involving the marginal and attached gingivae* and papillae.

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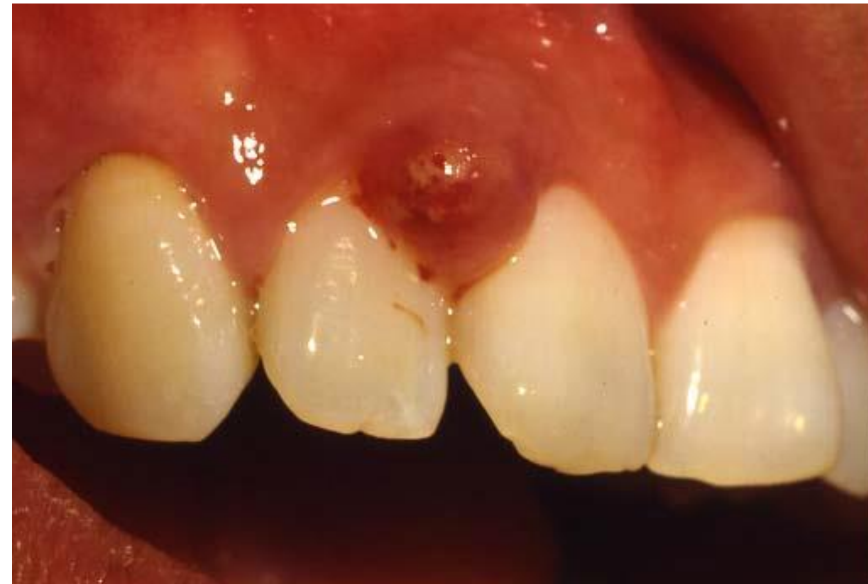
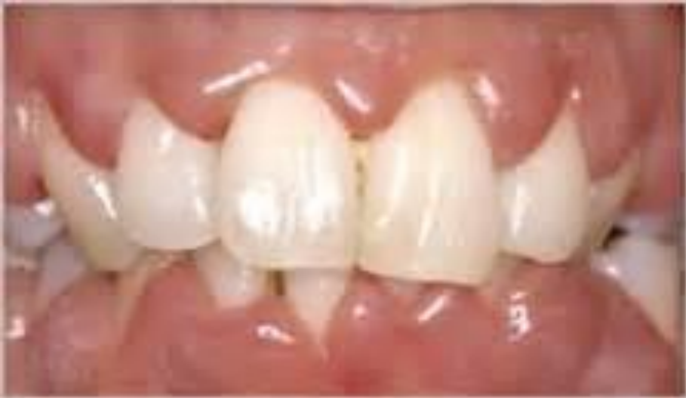


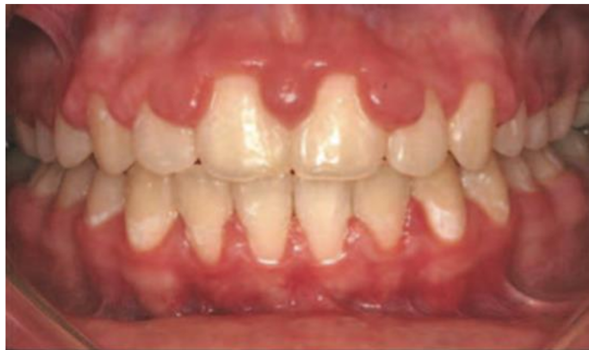
Discrete*: An isolated sessile or pedunculated,* tumorlike enlargement

The degree of gingival enlargement can be scored as follows:

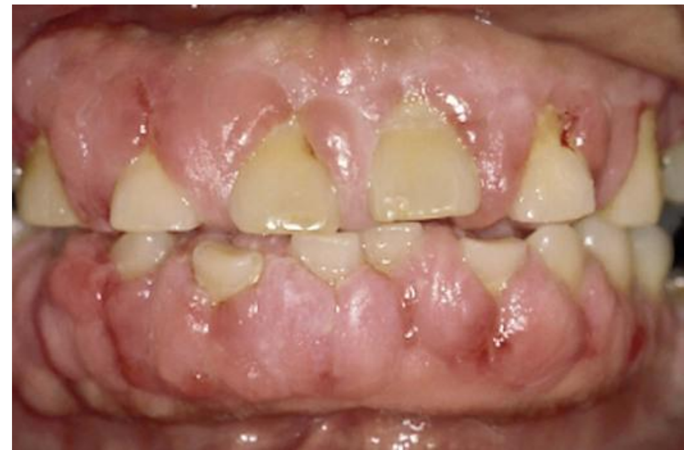
- *Grade 0: No signs of gingival enlargement.*
- *Grade I: Enlargement confined to interdental papilla.*
- *Grade II: Enlargement involves papilla and marginal* gingiva.
- *Grade III: Enlargement covers three quarters or more* of the crown.



Grade 1



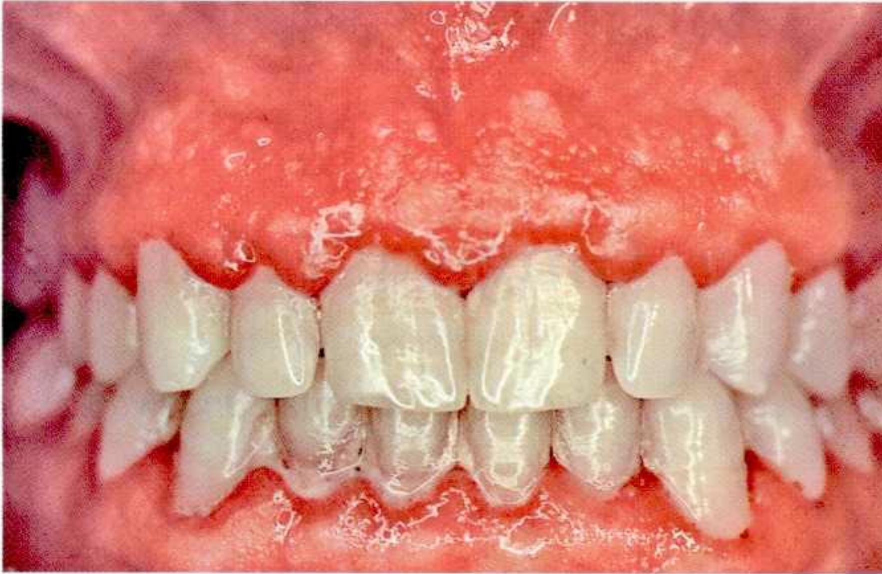
Grade 2

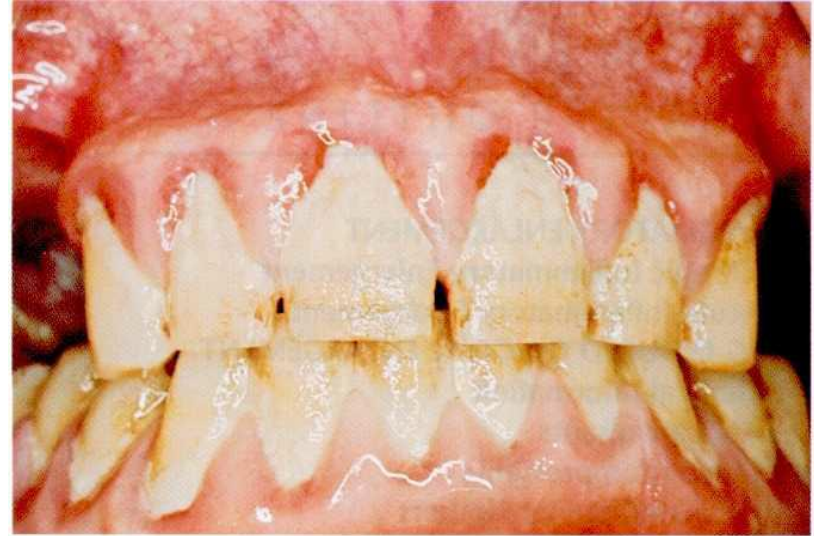


Grade 3

Inflammatory Enlargement

- Inflammatory enlargement of the gingiva usually results from **prolonged chronic inflammation** of the gingival tissue.
- In most cases, the enlargement results because of local irritations such as poor oral hygiene, accumulation of dental calculus or mouth breathing, and represents a **variation in host tissue response** to dental plaque accumulation.
- Gingival enlargement may result from **chronic** or **acute** inflammatory changes; chronic changes are much more common.

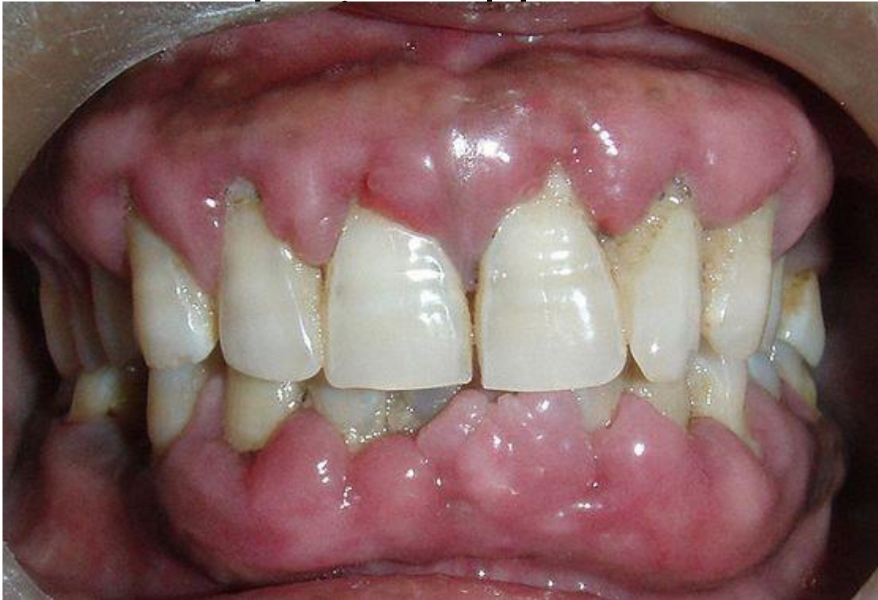




Chronic Inflammatory Enlargement originates as a slight ballooning of the interdental papilla and marginal gingiva. In the early stages it produces a **life preserver–shaped bulge** around the involved teeth. This bulge can increase in size until it covers part of the crowns. The enlargement may be localized or generalized and progresses slowly and **painless**ly unless it is complicated by acute infection or trauma
Occasionally, it occurs as a discrete sessile or pedunculated mass resembling a tumor. It may be interproximal or on the marginal or attached gingiva. The lesions are slowgrowing

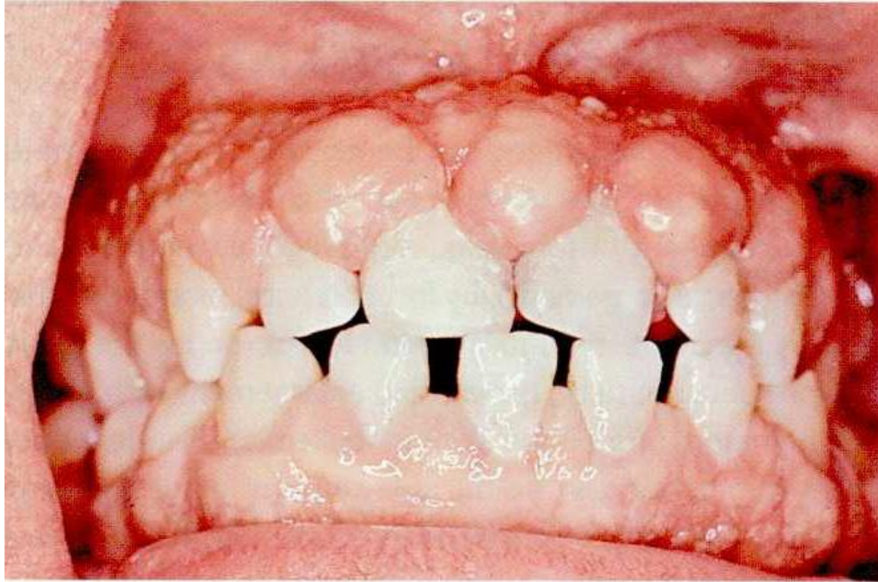
Drug Induced Gingival Enlargement

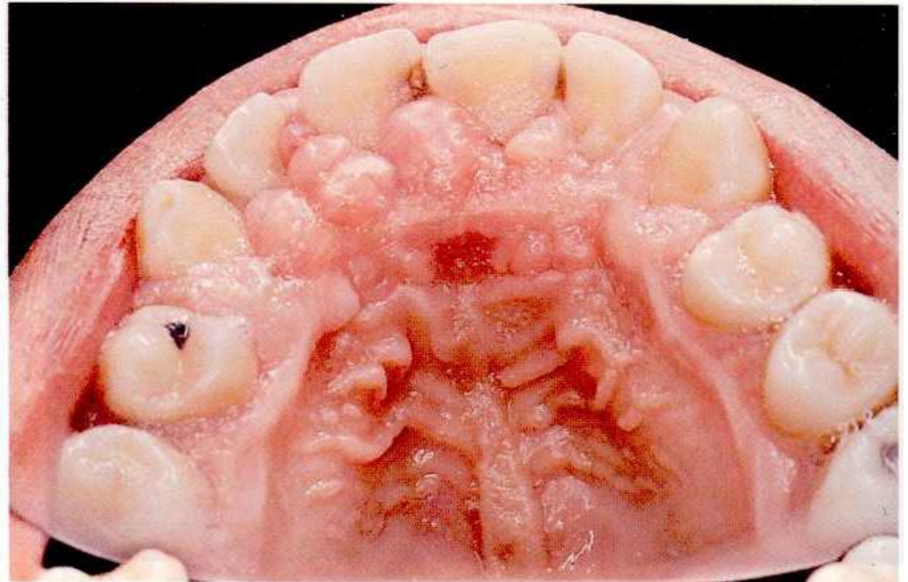
- Gingival enlargement is a well-known consequence of the administration of some anticonvulsants, immunosuppressants, and calcium channel blockers and may create difficulty in speech, mastication, tooth eruption, and



The growth starts as a **painless, beadlike** enlargement of the interdental papilla and extends to the facial and lingual gingival margins.

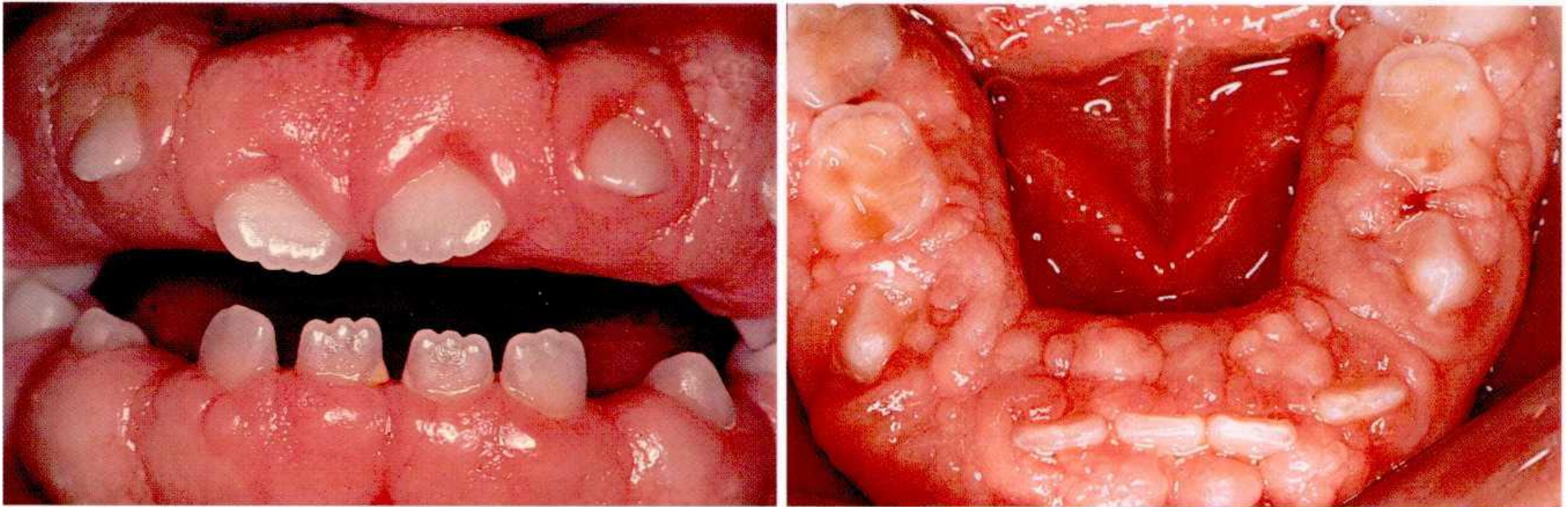
As the condition progresses, the marginal and papillary enlargements unite; they may develop into a **massive tissue fold** covering a considerable portion of the crowns, and they may interfere with occlusion





- When uncomplicated by inflammation, the lesion is **mulberry shaped, firm, pale pink, and resilient, with a minutely lobulated surface and no tendency to bleed**. The enlargement characteristically appears to project from beneath the gingival margin, from which it is separated by a linear groove.
- the presence of the enlargement makes plaque control difficult
- more severe in the maxillary and mandibular anterior
- not in edentulous spaces

Idiopathic gingival enlargement (gingivomatosis, elephantiasis, idiopathic fibromatosis,hereditary gingival hyperplasia, congenital familial fibromatosis)

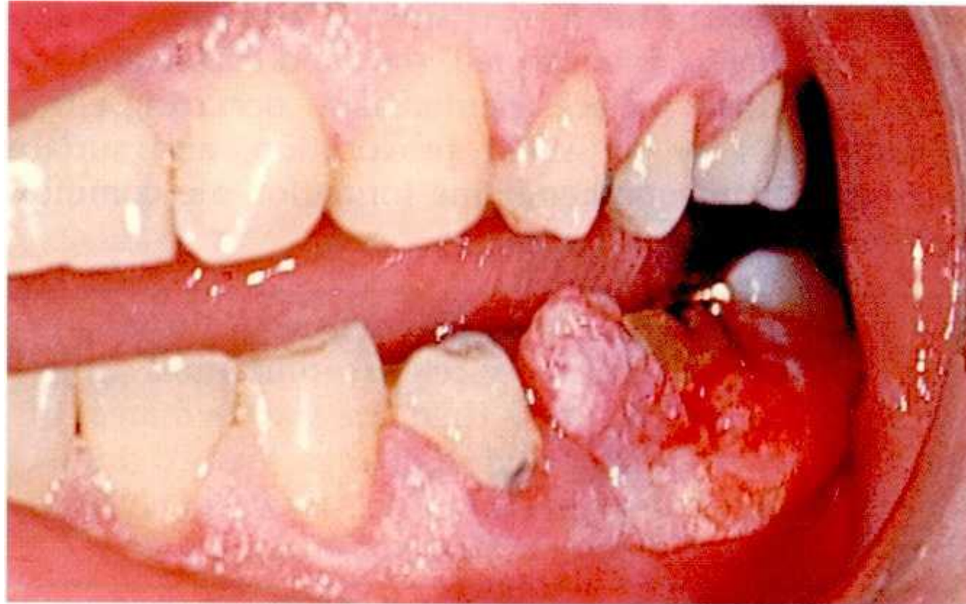


- The enlargement affects the <u>attached gingiva</u>, as well as the gingival margin and interdental papillae, in contrast to phenytoin-induced overgrowth, which is often limited to the gingival margin and interdental papillae.
- The enlarged gingiva is <u>pink, firm</u>, and <u>almost leathery</u> in consistency and has a characteristic minutely <u>pebbled</u> surface. In severe cases the teeth are almost completely covered, and the enlargement projects into the oral vestibule.

Enlargement Associated with Systemic Factors

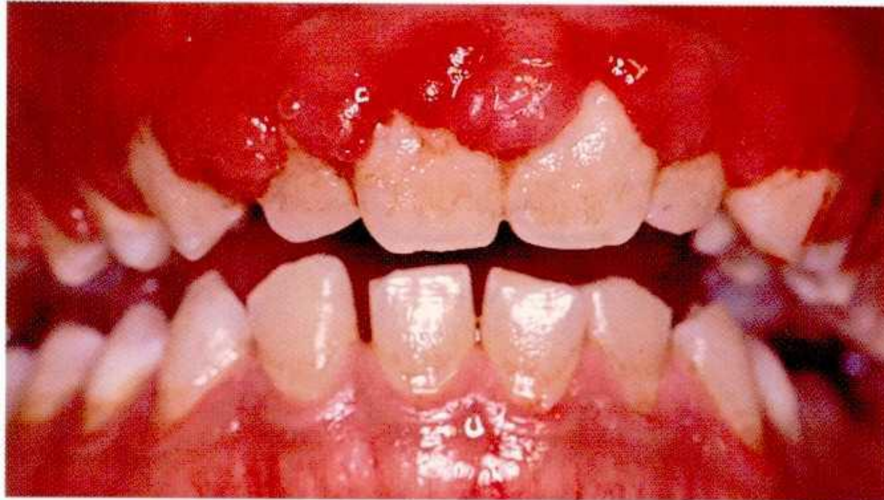
- **Conditioned Enlargement**
- Conditioned enlargements are caused by the systemic condition of the patient, which exaggerates the usual gingival response to dental plaque. However, bacterial plaque is essential for the initiation of this type of enlargement.
- There are three types of conditioned enlargements: hormonal, nutritional, and allergic.

Pregnancy gingival enlargement may be marginal and generalized or may occur as single or multiple tumor-like masses



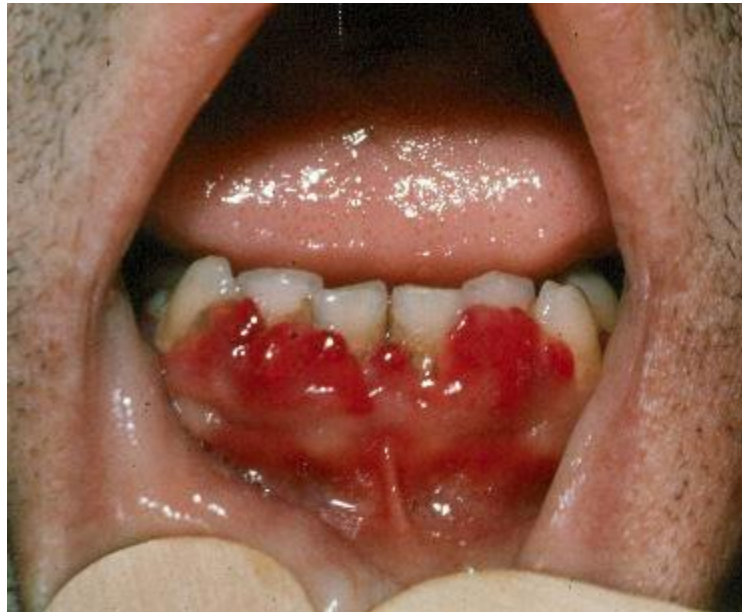
- During pregnancy there is an increase in levels of both progesterone and estrogen, which, by the end of the third trimester, reach levels 10 and 30 times the levels during the menstrual cycle, respectively.'- These hormonal changes induce changes in vascular permeability, leading to gingival edema and an increased inflammatory response to dental plaque.
- The subgingival microbiota may also undergo changes, including an increase in *Prevotella intermedia*.'"

Enlargement of the gingiva during **puberty** occurs in both male and female adolescents and appears in areas of plaque accumulation.



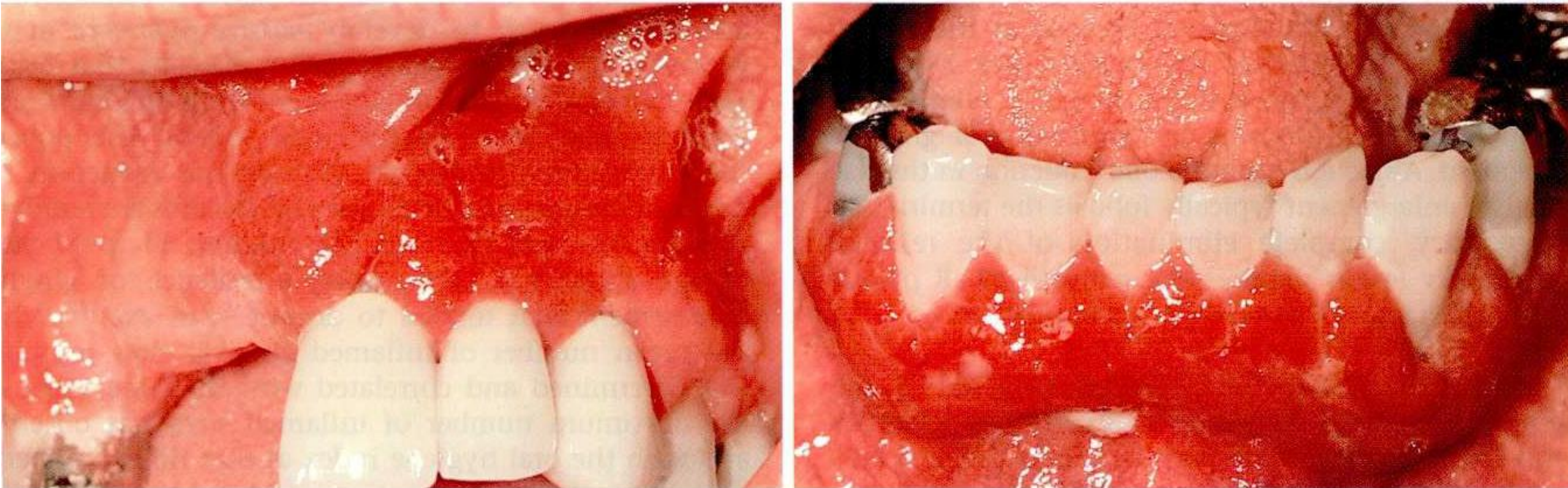
- The size of the gingival enlargement greatly exceeds that usually seen in association with comparable local factors. It is marginal and interdental and is characterized by prominent bulbous interproximal papillae
- Gingival enlargement during puberty has all the clinical features generally associated with chronic inflammatory gingival disease.

Acute **vitamin C deficiency** itself does not cause gingival inflammation, but it does cause hemorrhage, collagen degeneration, and edema of the gingival connective tissue. These changes modify the response of the gingiva to plaque



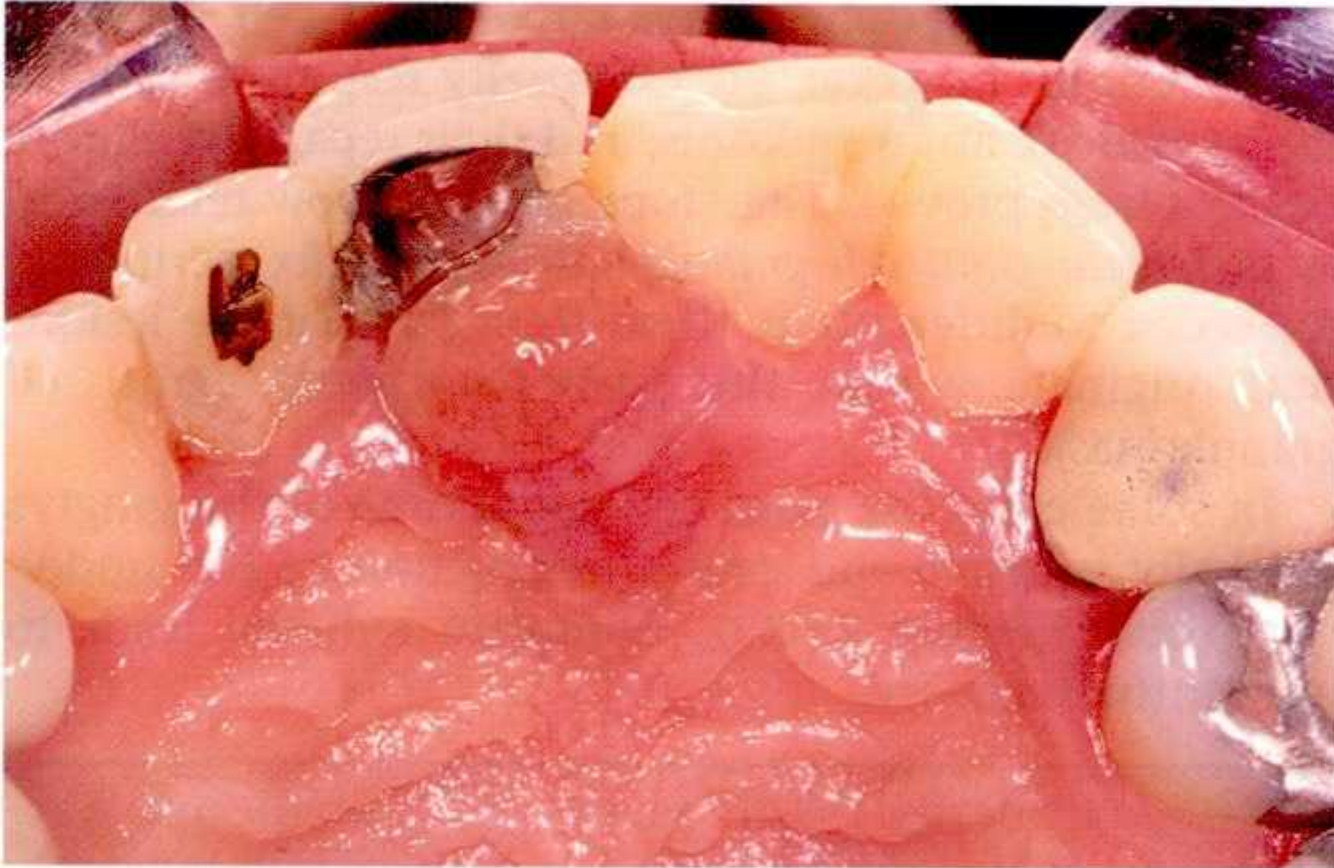
Gingival enlargement is marginal;the gingiva is bluish red, soft, and friable and has a smooth, shiny surface. Hemorrhage, occurring either spontaneously or on slight provocation, and surface necrosis with pseudomembrane formation are common features.

Plasma cell gingivitis often consists of a mild marginal gingival enlargement that extends to the attached gingiva.



The gingiva appears red, friable, and sometimes granular and bleeds easily; usually it does not induce a loss of attachment
This lesion is located in the oral aspect of the attached gingiva and therefore differs from plaque-induced gingivitis.

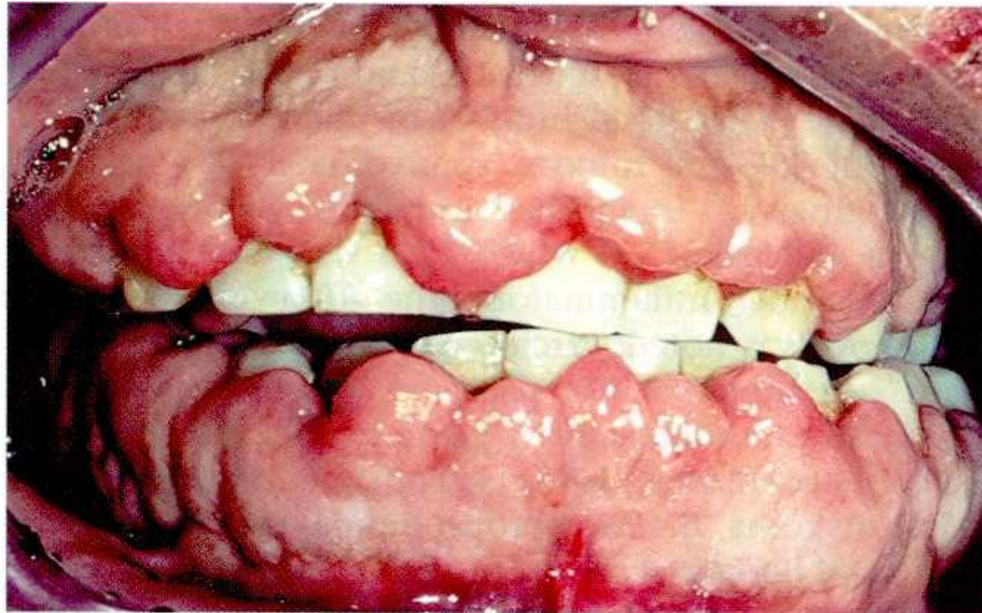
Nonspecific Conditioned Enlargement (Pyogenic Granuloma) is a tumorlike gingival enlargement that is considered an exaggerated conditioned response to minor trauma



The lesion varies from a discrete spherical, tumorlike mass with a pedunculated attachment to a flattened, keloid like enlargement with a broad base. It is bright red or purple and either friable or firm, depending on its duration; in the majority of cases it presents with surface ulceration and purulent exudation.

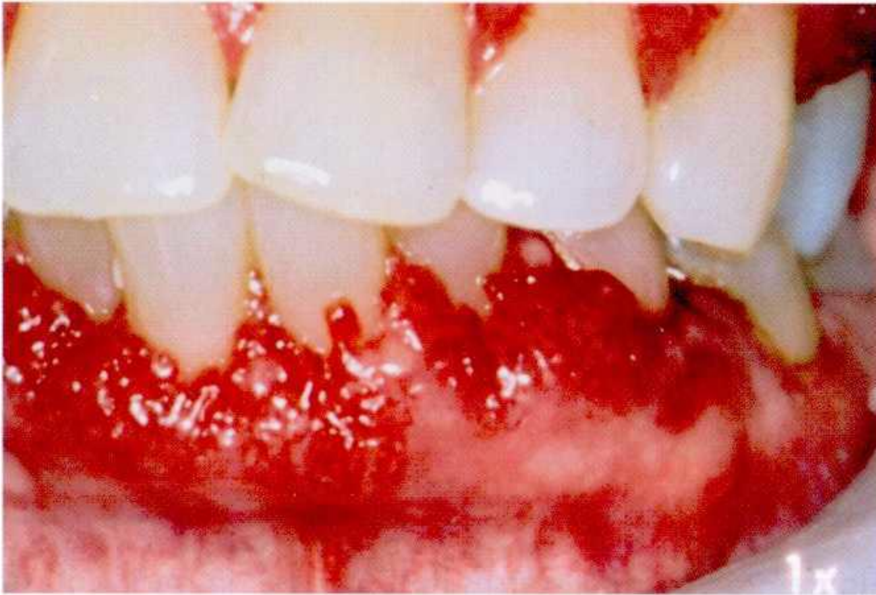
Enlargement Due to Systemic Diseases

Leukemic enlargement may be diffuse or marginal and localized or generalized.



- Gingiva is generally bluish red and has a shiny surface. The consistency is moderately firm, but there is a tendency toward friability and hemorrhage, occurring either spontaneously or on slight irritation.
- Acute painful necrotizing ulcerative inflammatory involvement sometimes occurs in the crevice formed at the junction of the enlarged gingiva and the contiguous tooth surfaces
- often occurs in acute leukemia

Granulomatous Diseases



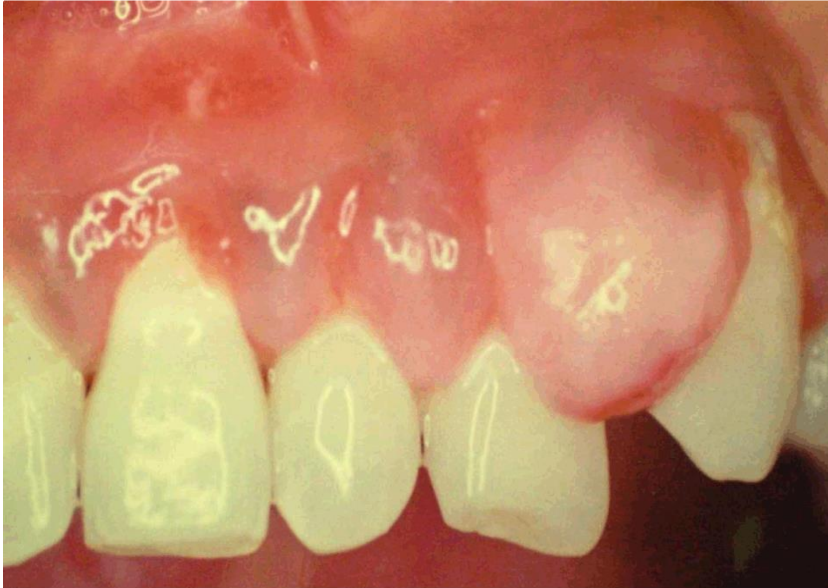
classic "strawberry gums" appearance of the mandibular gingiva

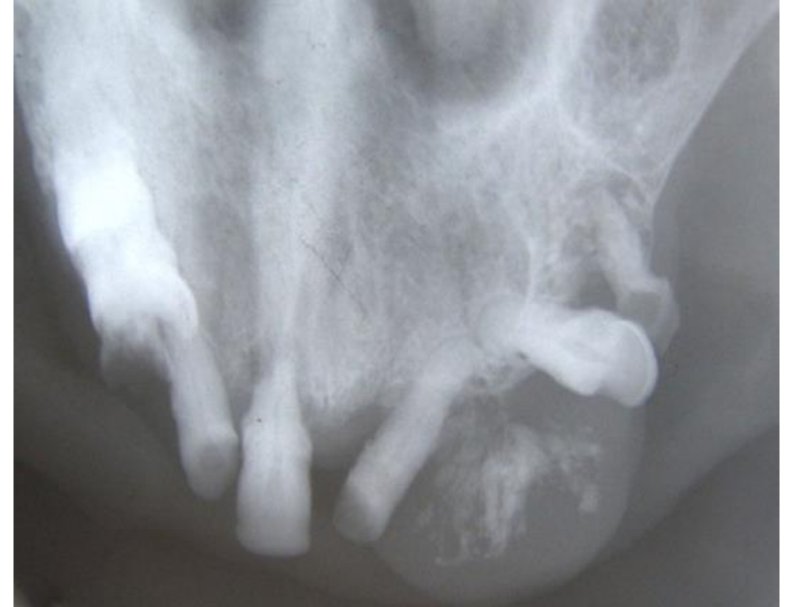
- **Wegener's granulomatosis** is a rare disease characterized by acute granulomatous necrotizing lesions of the respiratory tract,including nasal and oral detects.
- The granulomatous papillary enlargement is reddish purple and bleeds easily on stimulation.

NEOPLASTIC ENLARGEMENT (GINGIVAL TUMORS)

Benign Tumors of the Gingiva

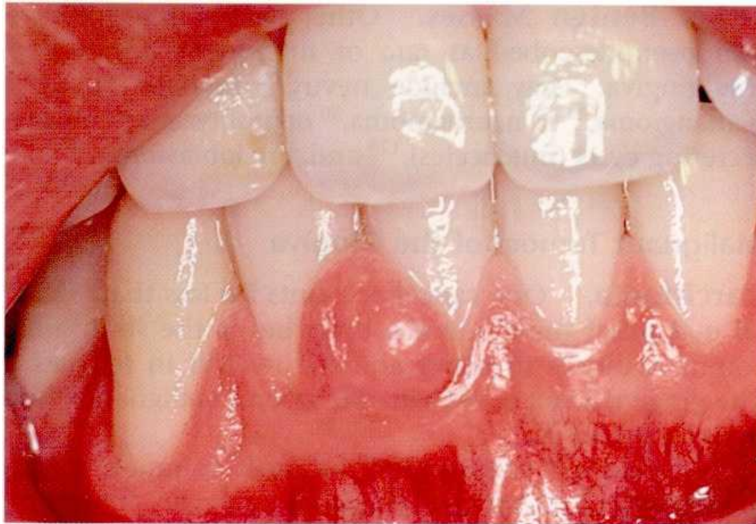
Epulis *is a generic term used clinically to designate all d*iscrete tumors and tumorlike masses of the gingiva. It serves to locate the tumor but not to describe it. Most lesions referred to as "epulis" are inflammatory rather
than neoplastic.





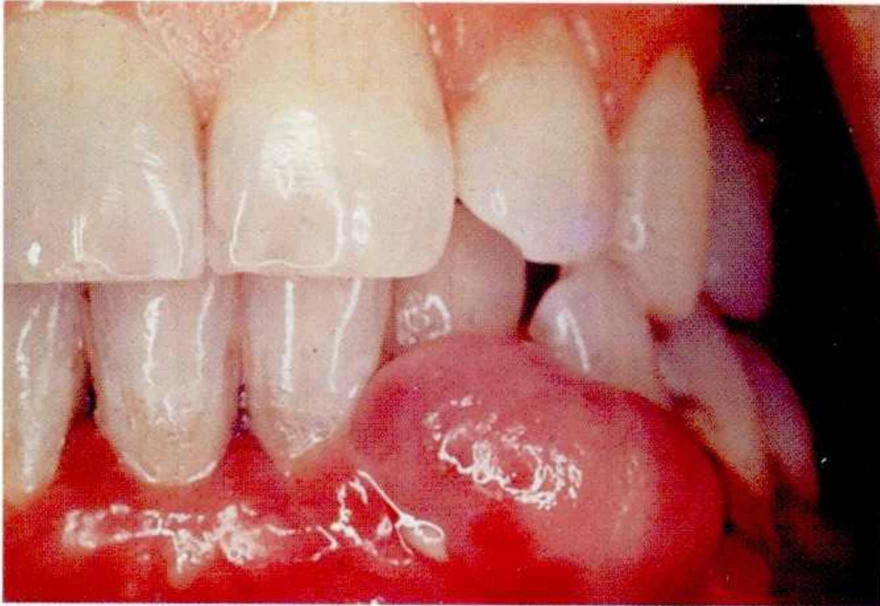
- **Fibromas** of the gingiva arise front the gingival connective tissue or from the periodontal ligament.
- They are slow-growing, spherical tumors that tend to be firm and nodular but may be soft and vascular.
- Fibromas are usually pedunculated.
- mineralized tissue (bone, cementum-like material, dystrophic calcifications) may be found; this type of fibroma is called **peripheral ossifying fbroma**.

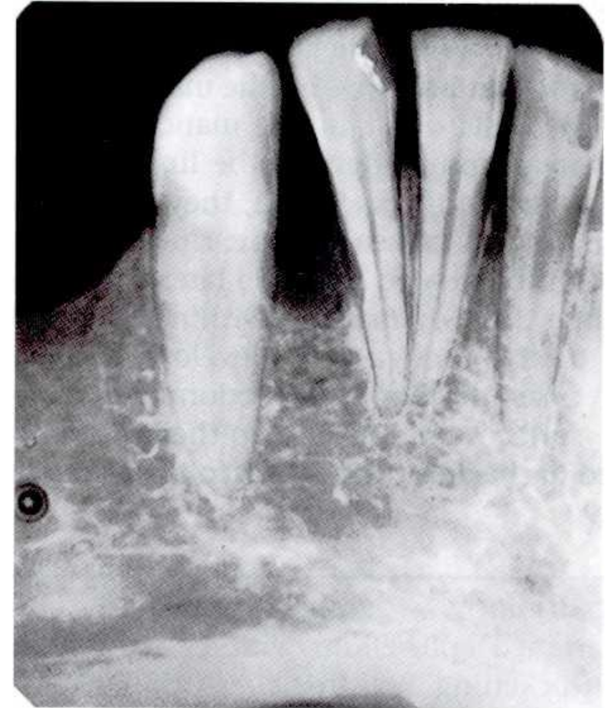
Papillomas are benign proliferations of surface epithelium associated with the human papillomavirus (HPV). Viral subtypes HPV-6 and HPV-11 have been found in most cases of oral papillomas.



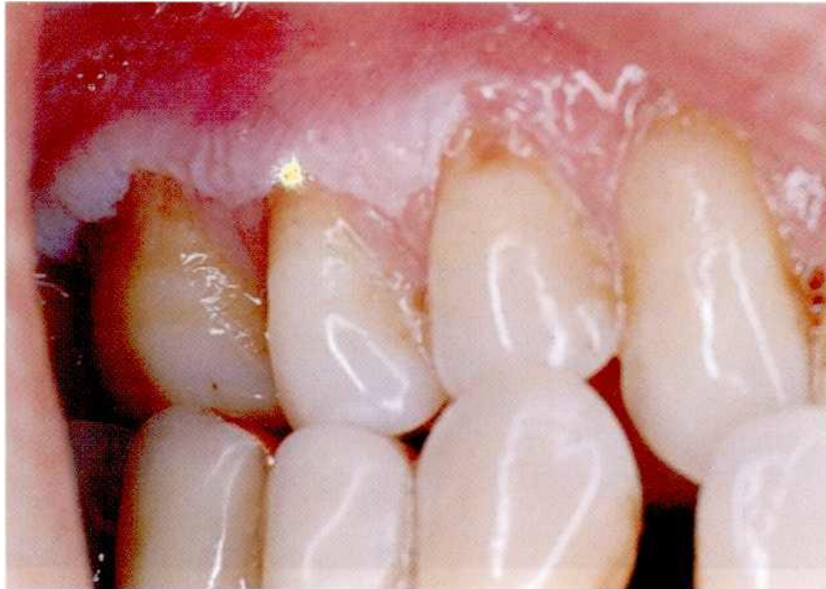
Gingival papillomas appear as solitary, wartlike or cauliflower-like protuberances. They may be small and discrete or broad, hard elevations with minutely irregular surfaces.

Peripheral Giant Cell Granuloma





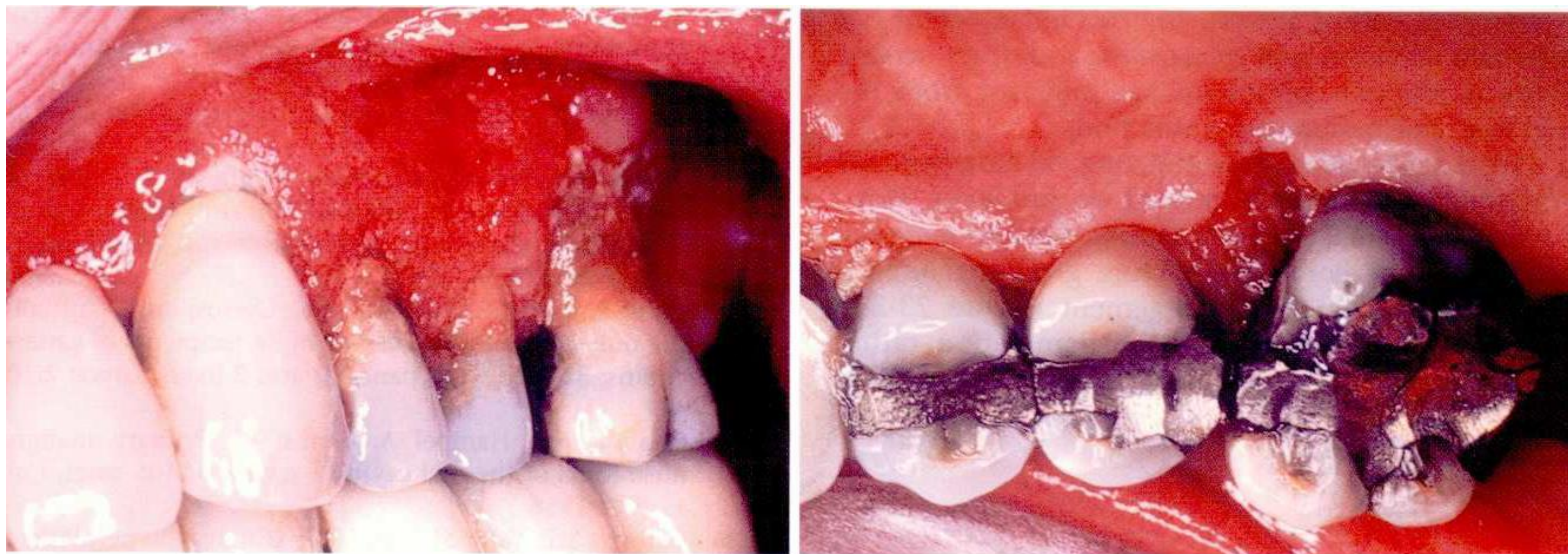
Giant cell lesions of the gingiva arise interdentally or from the gingival margin, occur most frequently on the labial surface, and may be sessile or pedunculated. They vary in appearance from smooth, regularly outlined masses to irregularly shaped, multilobulated protuberances with surface indentations. The lesions are painless, vary in size,firm or spongy, and the color varies from pink to deep red or purplish blue.



Leukoplakia of the gingiva

- clinical term defined by the World Health Organization as a white patch or plaque that does not rub off and cannot be diagnosed as any other disease
- grayish white, flattened, scaly lesion to a thick, irregularly shaped, keratinous plaque.

Malignant Tumors of the Gingiva

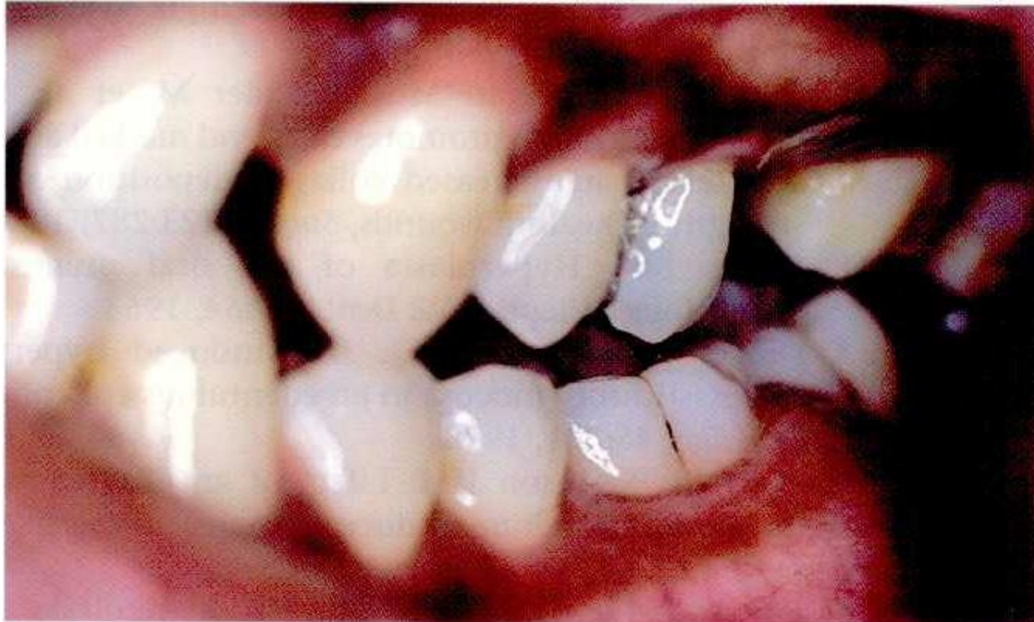


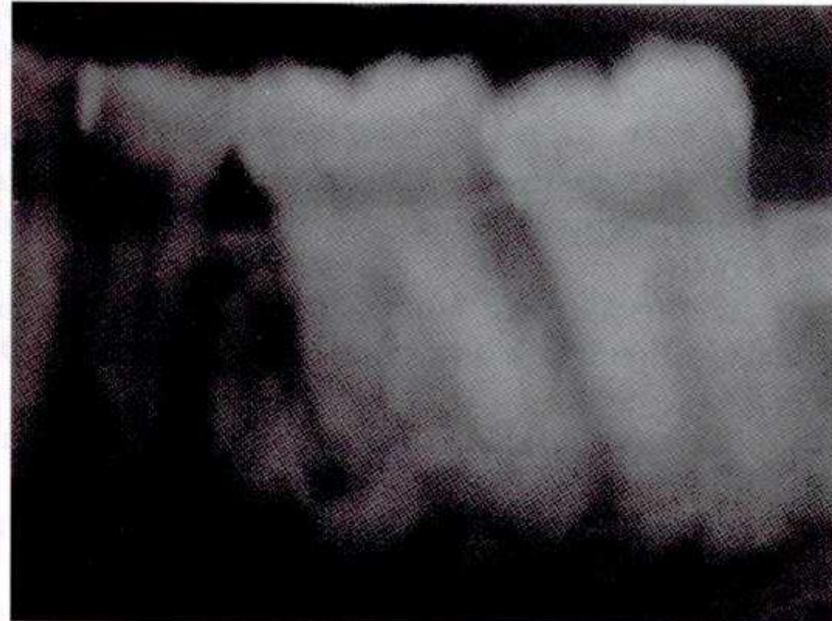
Squamous cell carcinoma *is the most common malignant* tumor of the gingiva. It may be *exophytic* , *presenting as an* irregular outgrowth, or *ulcerative*, *appearing as flat, erosive* lesions. It is often symptom free, going unnoticed until complicated by inflammatory changes that may mask the neoplasm but cause pain; sometimes it becomes evident after tooth extraction. These masses are locally invasive, involving the underlying bone and periodontal ligament of adjoining teeth and the adjacent mucosa.

•**Malignant melanoma** is a rare oral tumor that tends to occur in the hard palate and maxillary gingiva of older persons.'
•It is usually darkly pigmented and is often preceded by localized pigmentation.''
•It may be flat or nodular and is characterized by rapid growth and early metastasis.
•Infiltration into the underlying bone and metastasis to cervical and axillary lymph nodes are common.

FALSE ENLARGEMENT

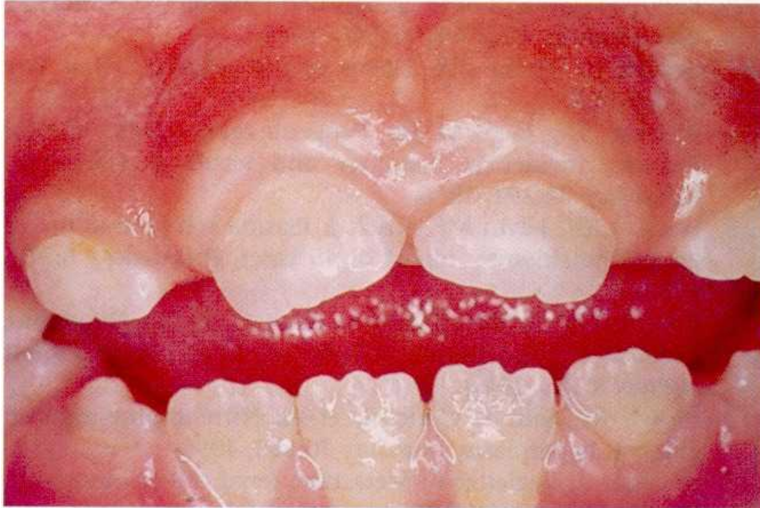
Underlying Osseous Lesions -Enlargement of the bone subjacent to the gingival area occurs most often in *tori and exostoses, but it can also* occur in Paget's disease, fibrous dysplasia, cherubism,central giant cell granuloma, ameloblastoma, osteoma, and osteosarcoma.





Apparent gingival enlargement associated with bone augmentation in patient with fibrous dysplasia

Underlying Dental Tissues



Developmental gingival enlargement. The normal bulbous contour of the gingiva around the incompletely erupted anterior teeth is accentuated by chronic inflammation

Periodontitis

- Periodontitis is defined as 'an inflammatory disease of the supporting tissues of the tooth caused by specific microorganisms or group of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with pocket formation, recession, or both'.
- It is classified as chronic, aggressive, and as a manifestation of systemic diseases.
- The so-called acute periodontitis that results from acute trauma is now termed as occlusal trauma.

Localized periodontitis: Periodontitis is considered localized when less than 30% of the sites assessed in the mouth demonstrate attachment loss and bone loss

Generalized periodontitis: Periodontitis is considered generalized when 30% or more of the sites assessed in the mouth demonstrate attachment loss and bone loss

Slight (mild) periodontitis: Periodontal destruction is generally considered slight when no more than 1 to 2 mm of clinical attachment loss has occurred.

Moderate periodontitis: Periodontal destruction is generally considered moderate when 3 to 4 mm of clinical attachment loss has occurred.

Severe periodontitis: Periodontal destruction is considered severe when 5 mm or more of clinical attachment loss has occurred.

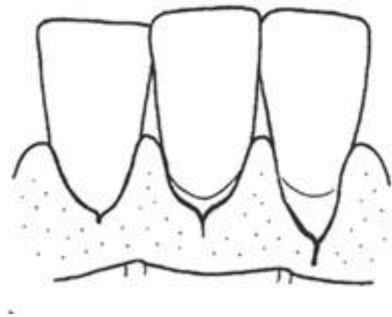
Chronic Periodontitis: ***(Periodontoclasia, pyorrhea,pyorrhea alveolaris)***

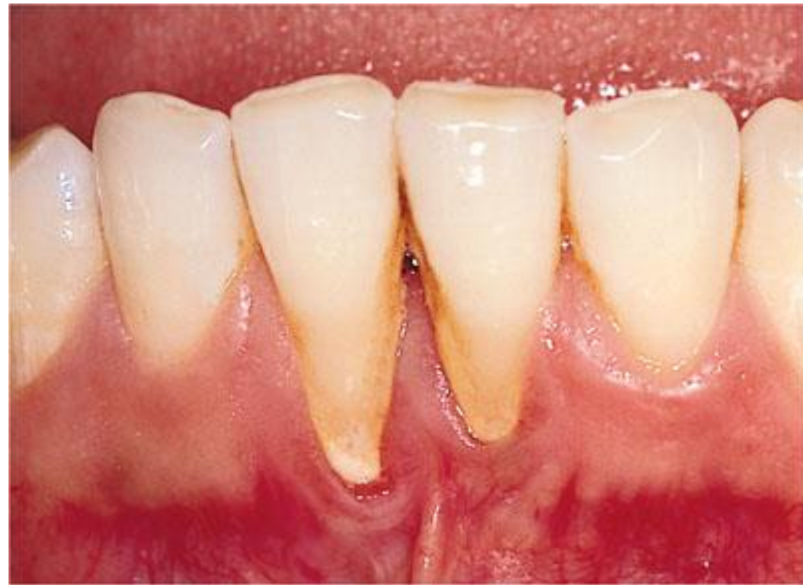
- Chronic periodontitis is the most common form of periodontal disease and is associated with local irritation.
- This begins as a marginal gingivitis, which usually progresses, if untreated or improperly treated, to chronic periodontitis.
- The amount of tissue destruction is consistent with local factors.

Gingival recession

- Gingival recession is a common phenomenon, particularly in later years in life.
- In such cases the gingival tissues recede toward the apex, exposing the cementum, sometimes to an alarming degree.
- Since the cementum is softer than enamel, it is often worn away by a toothbrush and an abrasive dentifrice.

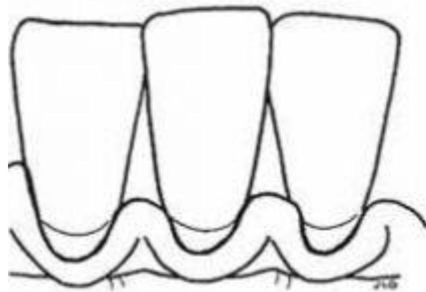
Stillman's Cleft

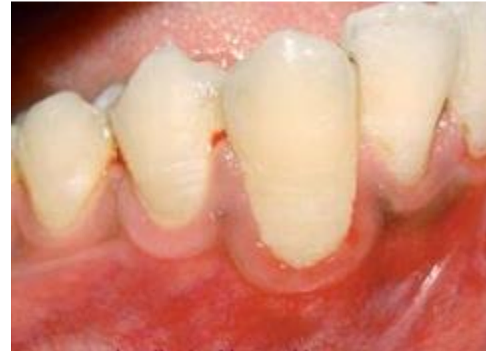




Stillman's cleft is a mucogingival triangular-shaped defect

McCall's Festoon

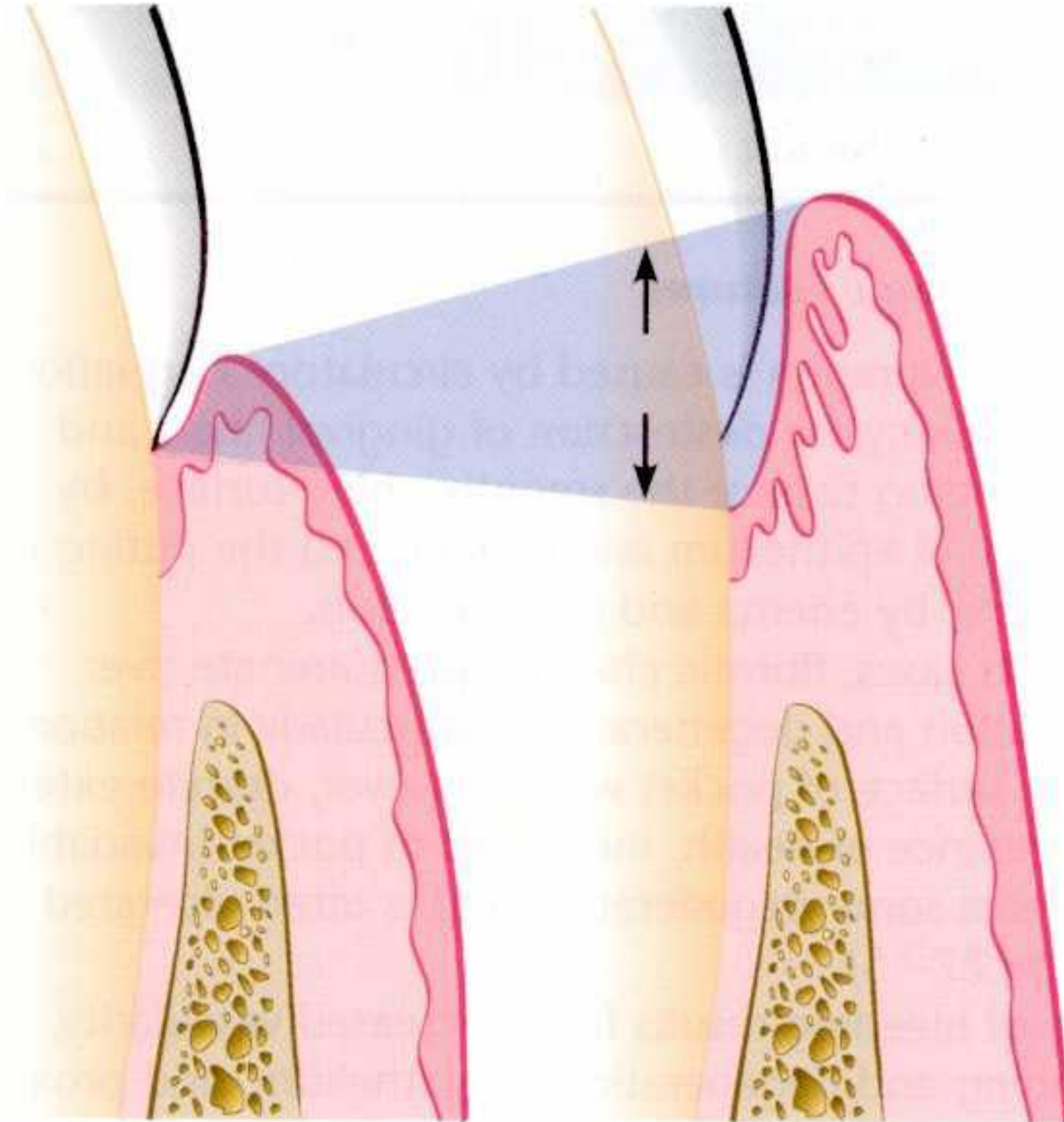




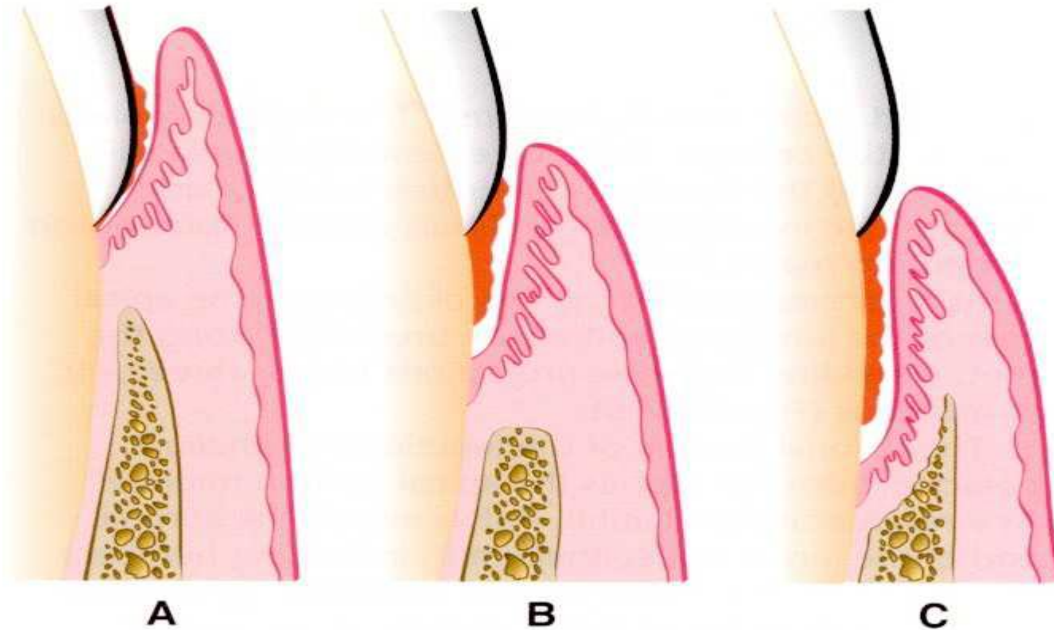
Semilunar-shaped enlargements of the marginal gingivae primarily on the labial surfaces of the anterior and premolar teeth

Periodontal pocket

The periodontal pocket, defined as a pathologically deepened gingival sulcus, is one of the most important clinical features of periodontal disease.



Classification of Periodontal Pockets

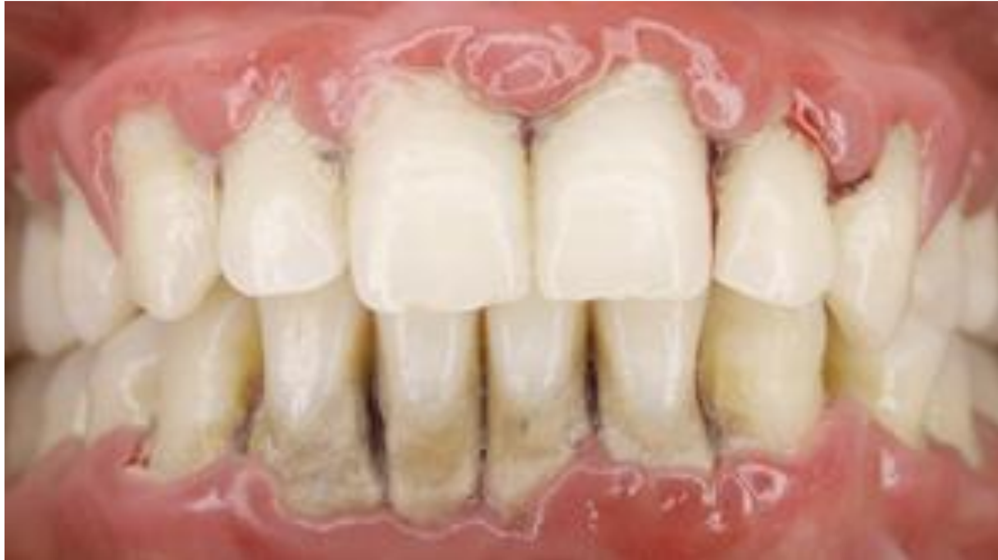


A,Gingival pocket(Pseudopocket) There is no destruction of the supporting periodontal tissues.
B, Suprabony pocket. The base of the pocket is coronal to the level of the underlying bone. Bone loss is horizontal.
C, **Intrabony pocket**. The base of the pocket is apical to the level of the adjacent bone. Bone loss is vertical.

Clinical Features

1.Gingival wall of pocket presents various degrees of bluish red discoloration; flaccidity; a smooth, shiny surface; and pitting on pressure.
2. Less frequently, gingival wall may be pink and firm.
3. Bleeding is elicited by gently probing soft tissue wall of pocket.
4. When explored with a probe, inner aspect of pocket is generally painful.
5. In many cases, pus may be expressed by applying digital pressure.

Aggressive Periodontitis

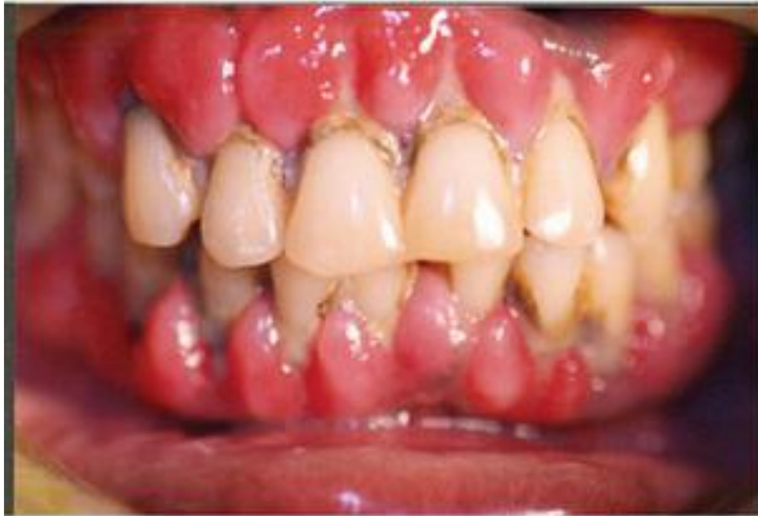


- Aggressive periodontitis is a rapidly progressing type of periodontitis that occurs in patients who do not have large accumulations of plaque and calculus. This may be either localized or generalized
- It has a familial tendency suggesting a genetic predisposition.
- Patients with aggressive periodontitis display functional defects of polymorpho nuclear leukocyte, monocytes, or both, but without any systemic manifestations.

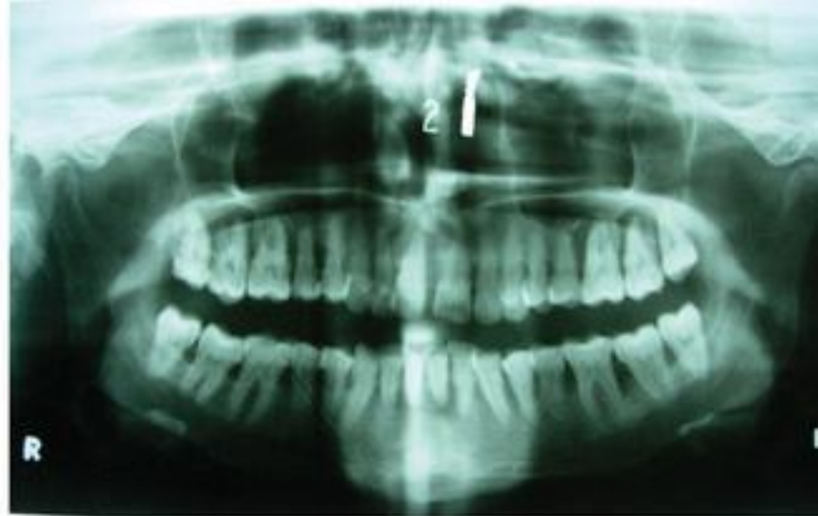
Localized form

•This usually occurs around puberty and has a strong familial tendency.
•It is localized to the first molars and incisors
• A striking feature is the absence of clinical inflammation with minimal local factors despite the presence of a deep periodontal pocket.
•The disease is associated primarily with *A. actinomycetemcomitans.*

Generalized form



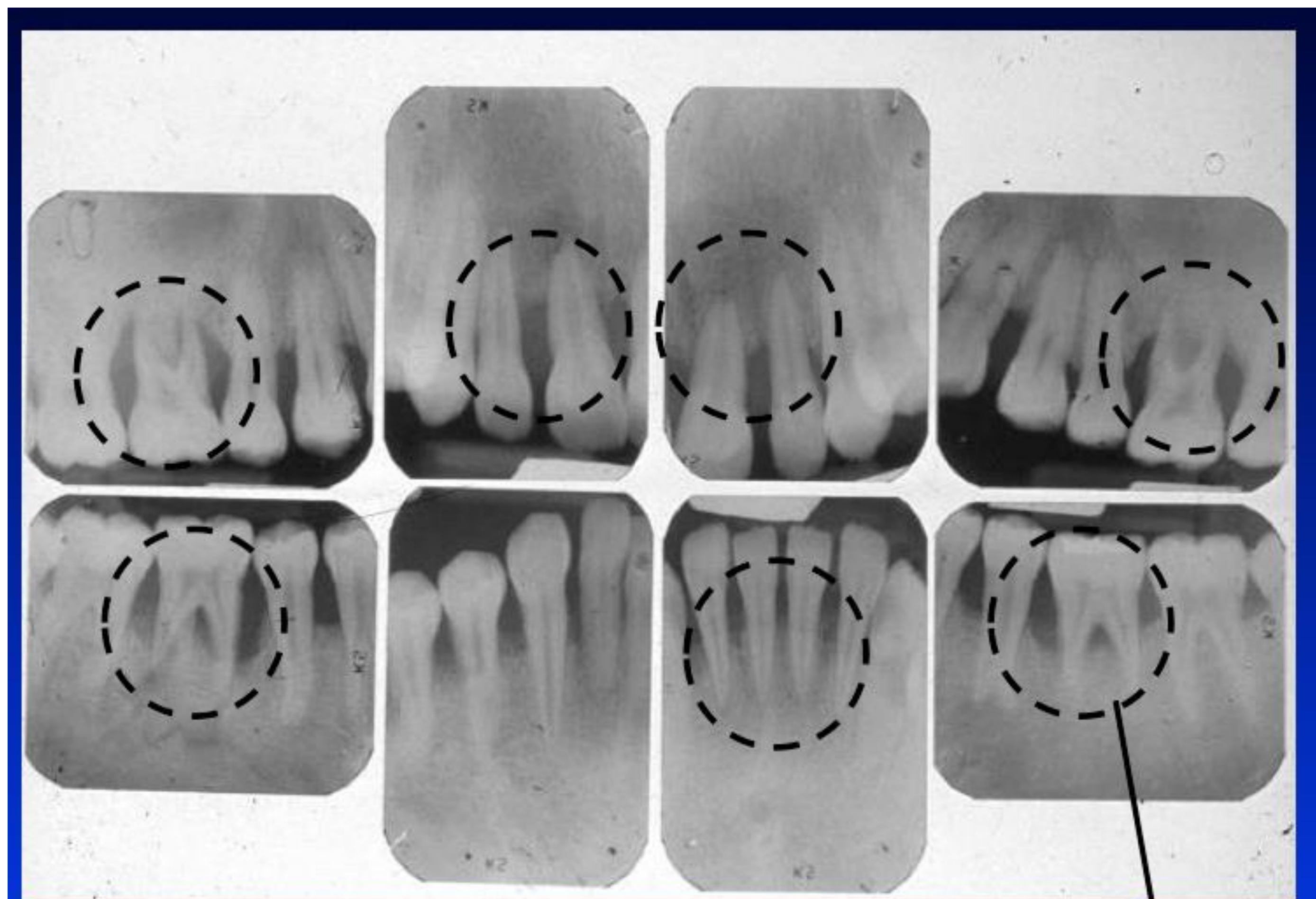
A



B

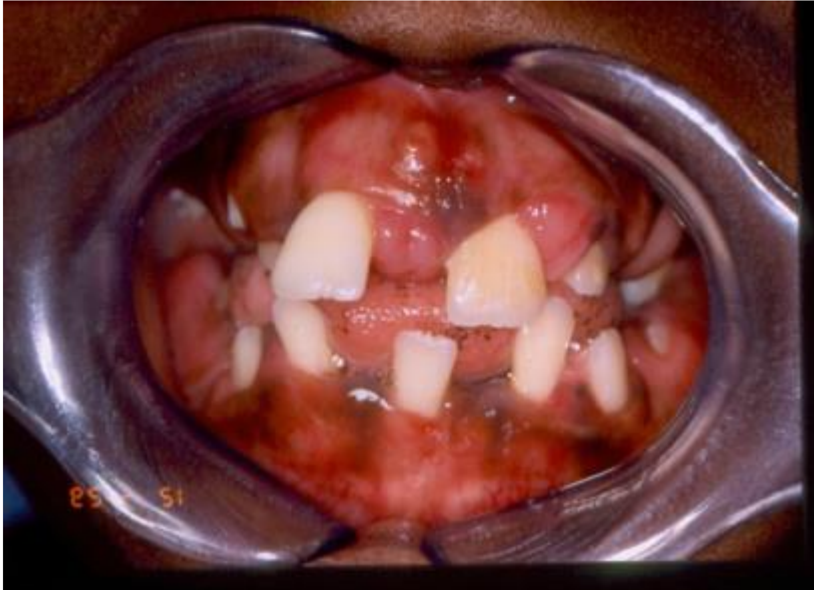
Generalized aggressive periodontitis.
The presence of a large amount of plaque, calculus and gingival infection, (A). Loss of bone support involving more than three teeth other than first molars and incisors, (B)

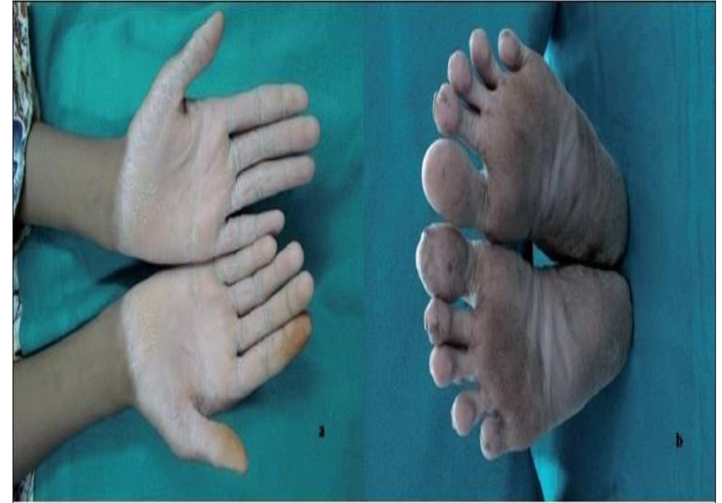
Radiographic Features



arc-shaped bone loss

Papillon-Lefèvre syndrome





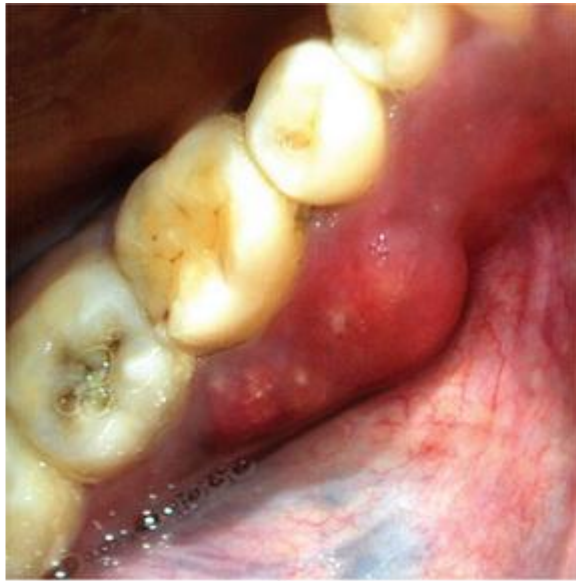
Autosomal recessive disorder that is characterized by cutaneous and oral manifestations.
The characteristic **skin lesions** consist of keratotic lesions of palmar and plantar surfaces.
The **oral lesions** are characterized by aggressive periodontitis leading to severe destruction of the alveolar bone involving both the deciduous and permanent dentitions. Due to rapid bone loss, mobility and pathological migration occurs, which results in loss of the

- **Management**
- Antibiotics should be administered in combination with mechanical removal of plaque and inflamed periodontal tissues.
- Periodontal surgery should be performed with prophylactic antibiotic cover and postoperative usage of chlorhexidine mouthrinse.
- Periodic follow-up is necessary since there is possibility of reinfection.

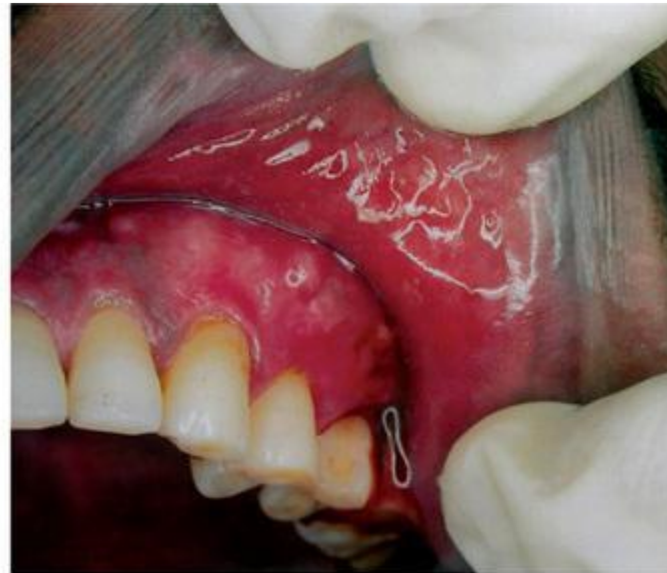
Necrotizing Ulcerative Periodontitis

- Necrotizing ulcerative periodontitis shows attachment and bone loss and may be associated with immune suppression or malnutrition.
- These diseases may be accompanied by fever, malaise and lymphadenopathy.
- occurs in younger patients than those with chronic periodontitis.
- If the underlying immuno-suppression and malnutrition is corrected, it usually responds to oral hygiene and antibiotics.

Lateral Periodontal Abscess: *(Lateral abscess)*



A

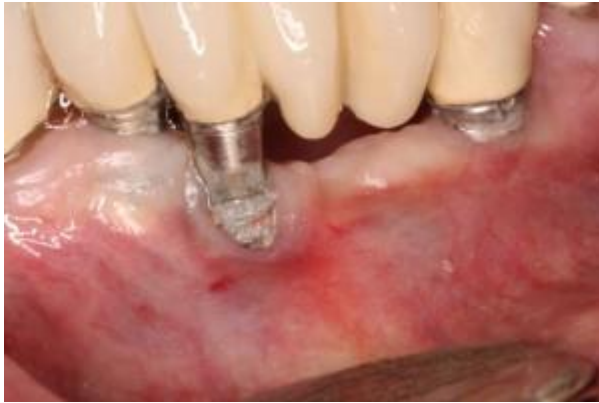


B

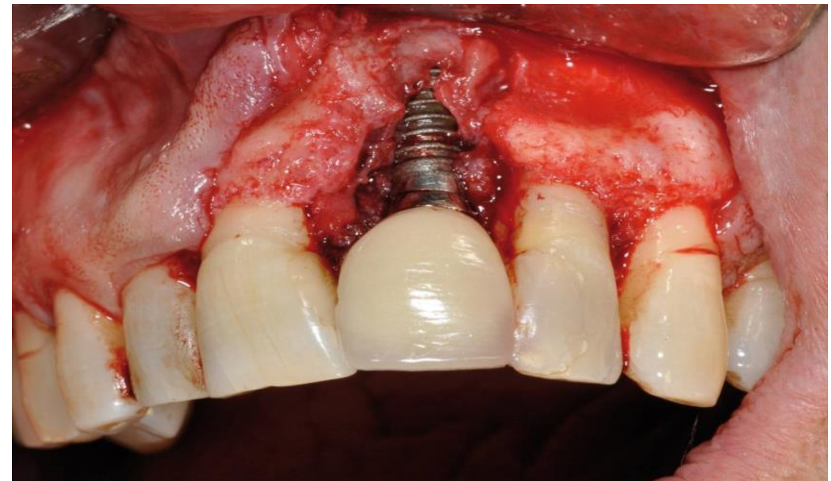
- The lateral periodontal abscess is related directly to a preexisting periodontal pocket. Precipitating factors include subgingival flora, host resistance, or both.

• When such a pocket reaches sufficient depth, around 5–8 mm, the soft tissues around the neck of the tooth approximate the tooth so tightly that the **orifice of the pocket is occluded**.

• Pain, foul taste, mobility of the involved tooth, tenderness over the corresponding gingiva, and lymphadenopathy are the other symptoms.



Peri-Implantitis Inflammation of the soft tissues surrounding the osseointegrated implant in function and progressive bone loss is termed as peri-implantitis.



Proliferation of gingival tissues in and around peri-implant area or inflammation of surrounding soft tissue as redness are called **Peri-implant mucositis.**