First semester-Classification of Diseases and Conditions Affecting the Periodontium

Lec6-Part 1

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Content

- Previous classification of periodontal disease
- classification of periodontal disease **(The 1999 AAP Classification)**
- Classification of Gingival Diseases
- Dental Plaque–Induced Gingival Diseases
- Non–Plaque-Induced Gingival Lesions

❖ Classification of disease is necessary to study the:

I. Etiology

II. Pathogenesis

III.Treatment of diseases

Previously (AAP IN 1989)

I. Adult periodontitis

II. Early-onset periodontitis

A. Prepubertal periodontitis (Localized or Generalized)

B. Juvenile periodontitis (Localized or Generalized)

C. Rapidly progressive periodontitis

III. Periodontitis associated with systemic disease

IV. Necrotizing ulcerative periodontitis

V. Refractory periodontitis

❖ ***Where are we now*** (The 1999 AAP Classification)

- ✓ Gingival disease category introduced.
- ✓ 'Adult periodontitis' replaced by 'chronic periodontitis'.
- ✓ 'Refractory disease' category removed.
- ✓ 'Early-onset periodontitis' replaced by 'aggressive periodontitis'.
- ✓ 'Necrotizing periodontal diseases' were introduced to cover both 'necrotizing periodontitis' and 'necrotizing gingivitis'.
- ✓ 'Periodontal abscess' and 'periodontal-endodontic' lesions were added.
- ✓ A category for developmental or acquired lesions was introduced.

Gingival Diseases

Plaque-induced gingival diseases[a]

Non–plaque-induced gingival lesions

Chronic Periodontitis[b]

Localized

Generalized

Aggressive Periodontitis

Localized

Generalized

Periodontitis as a Manifestation of Systemic Diseases

Necrotizing Periodontal Diseases

Necrotizing ulcerative gingivitis (NUG)

Necrotizing ulcerative periodontitis (NUP)

Abscesses of the Periodontium

Gingival abscess

Periodontal abscess

Pericoronal abscess

Periodontitis Associated With Endodontic Lesions

Endodontic–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

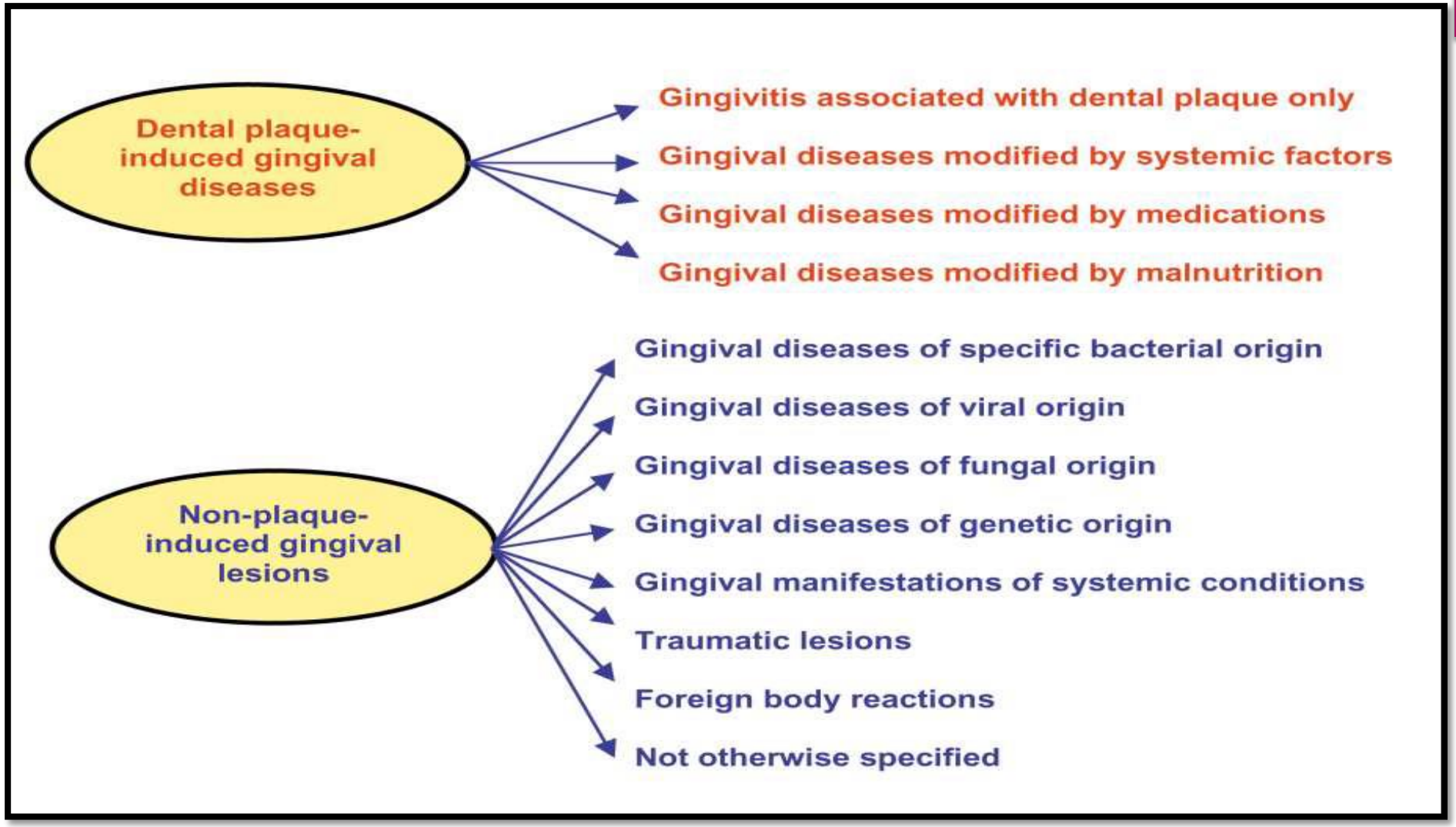
Mucogingival deformities and conditions around teeth

Mucogingival deformities and conditions on edentulous ridges

Occlusal trauma

Classification of Periodontal Diseases and Conditions

Gingival disease



Classification of Gingival Diseases

❑ Dental Plaque–Induced Gingival Diseases

Dental Plaque–Induced Gingival Diseases

These diseases may occur on a periodontium with no attachment loss or 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 (see Box 5.4)

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

❑ Non–Plaque-Induced Gingival Lesions

Non–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 the following:
      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

Dental Plaque–Induced Gingival Diseases

1. Gingivitis associated with dental plaque only

- It is called plaque induced gingivitis and itis inflammation of the gingiva resulting from dental plaque only, it is either

- without local contributing factors or
- With local contributing factors.

- The local contributing factors can be defined as a local feature that may it influence the presentation of the disease, such as

- Overhanging restoration
- Dental calculus and.
- Prosthetic and orthodontic appliances

2. Gingival Diseases Modified by Systemic Factors

- Systemic factors that contribute to gingivitis—such as

A. Associated with endocrine system

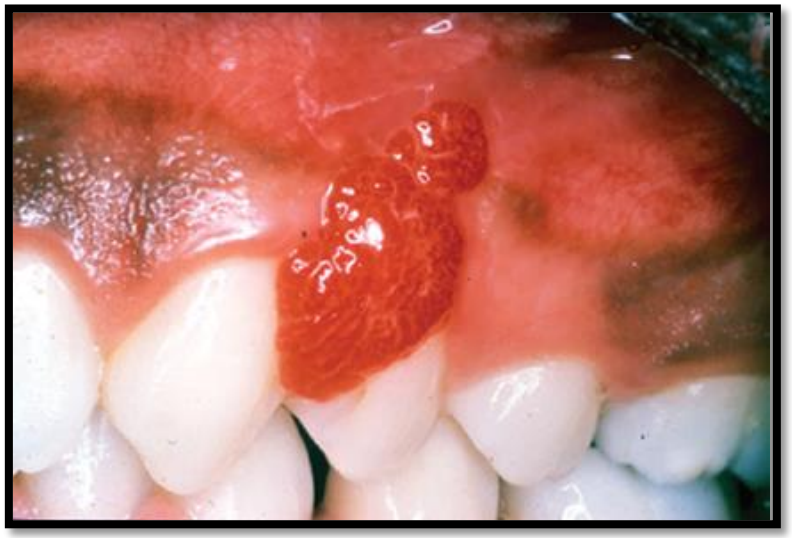
1. Puberty-associated gingivitis
2. Menstrual cycle–associated gingivitis
3. Pregnancy associated Gingivitis or Pyogenic granuloma
4. Diabetes mellitus–associated gingivitis

1.Puberty - associated gingivitis: It is pronounce inflammatory response of gingiva to dental plaque and hormone during the circumpubertal period (11 - 16) years.

2. Menstrual cycle - associated gingivitis: It is pronounced inflammatory response of the gingival to plaque and hormones immediately prior to ovulation.

3.a. pregnancy - associated gingivitis: It is pronounced inflammatory response of the gingiva to dental plaque and hormones usually occurring during the second and third trimesters.

B. pregnancy-associated pyogenic granuloma: It is a localized, painless, protuberant, exophytic gingival mass that is attached by a sessile or pedunculated base from the gingival margin or more commonly from an interproximal space resulting from dental plaque and hormones during pregnancy. it is more common in the maxilla and may develop as early as the first trimesters and may regress or completely disappear following parturition.



4. Diabetes mellitus–associated gingivitis: it is the inflammatory response of the gingival to plaque aggravated by poorly controlled plasma glucose levels.

B. Associated with blood dyscrasias

1. Leukemia-associated gingivitis
2. Other

➢ In blood dyscrasias (e.g., leukemia), the reduced number of immunocompetent lymphocytes in the periodontal tissues is associated with increased edema, erythema, and bleeding of the gingiva as well as gingival enlargement that may be associated with the swollen, spongy gingival tissues caused by the excessive infiltration of malignant blood cells.

3. Gingival Diseases Modified by Medications

A.Drug influenced gingival enlargement

- Gingival diseases that are modified by medications include gingival overgrowth due to anticonvulsant drugs such as phenytoin, immunosuppressive drugs such as cyclosporine. And calcium channel blockers such as Nifedipine, verapamil, diltiazem and sodium valproate.

gingival overgrowth due to cyclosporine therapy

B.Oral contraceptive associated gingivitis

- The increased use of oral contraceptives by premenopausal women has also been previously associated with a higher incidence of gingival inflammation and gingival enlargement.

gingival overgrowth following use a of calcium channel blocker

4. Gingival *Diseases Modified by Malnutrition*

- Gingival diseases modified by malnutrition have received attention because of clinical descriptions of bright red, swollen, and bleeding gingiva associated with severe ascorbic acid (vitamin C) deficiency.

Non–Plaque-Induced Gingival Lesions

- The origin of gingival inflammation in this group is different from that of the routine plaque associated gingivitis. It is not caused by plaque and usually dose not disappear after plaque removal.

❖ *Gingival Diseases of Specific Bacterial Origin*

- Gingival diseases of this category are attributed to specific bacteria that cause characteristic lesions in the gingiva. ***Neisseria gonorrhoeae*** and ***Treponema pallidum*** that can be transferred as a result of sexually transmitted diseases such as gonorrhea and syphilis, respectively

- **Streptococcal gingivitis or gingivostomatitis** is a rare entity that may present as an acute condition with fever, malaise, and pain associated with acutely inflamed, diffuse, red, and swollen gingiva with increased bleeding and occasional gingival abscess formation. The gingival infections are usually preceded by tonsillitis.

❖ *Gingival Diseases of Viral Origin*

❑ *Herpes virus infections*

- A number of viral infections are known to cause gingivitis. The most important are the herpes viruses: herpes simplex viruses type 1 (HSV-1) and type 2 (HSV-2) and varicella zoster virus.

- These viruses usually enter the human body in childhood and may give rise to oral mucosal disease followed by periods of latency and sometimes reactivation.

- HSV-1 usually causes oral manifestations.

❑ Primary herpetic gingivostomatitis

- HSV infections are among the most common viral infections.

- The primary herpetic infection may run an asymptomatic course in early childhood, but may also give rise to severe gingivostomatitis, which occurs mostly before adolescence.

- ✓ This manifestation includes painful severe gingivitis with redness, ulcerations with serofibrinous exudate, and edema accompanied by stomatitis.
- ✓ The incubation period is 1 week.
- ✓ A characteristic feature is the formation of vesicles, which rupture, coalesce, and leave fibrincoated ulcers. Fever and lymphadenopathy are other classic features.
- ✓ Healing occurs spontaneously without scarring in 10–14 days.
- ✓ During this period pain can render eating difficult.

Herpetic gingivostomatitis

❖*Gingival Diseases of Fungal Origin*

- Gingival diseases occur more frequently in immunocompromised individuals and in those with disturbed microbiota by the long-term use of broad-spectrum antibiotics.

- The most common oral fungal infection is candidiasis (Candida albicans).

- The most common clinical characteristic of gingival candida infections is redness of the attached gingiva, often associated with a granular surface.

- In human immunodeficiency virus (HIV) seropositive persons, candidal infection may present as distinct linear erythematous band limited to the free gingiva; this has been referred to as linear gingival erythema or HIV-associated gingivitis.

❖ *Gingival Diseases of Genetic Origin*

- One of the most clinically evident conditions is hereditary gingival fibromatosis, which exhibits autosomal-dominant or (rarely) autosomal-recessive modes of inheritance.

- The gingival enlargement may completely cover the teeth, delay eruption, and present as an isolated finding; alternatively, it may be associated with several more generalized syndromes.

Hereditary gingival fibromatosis

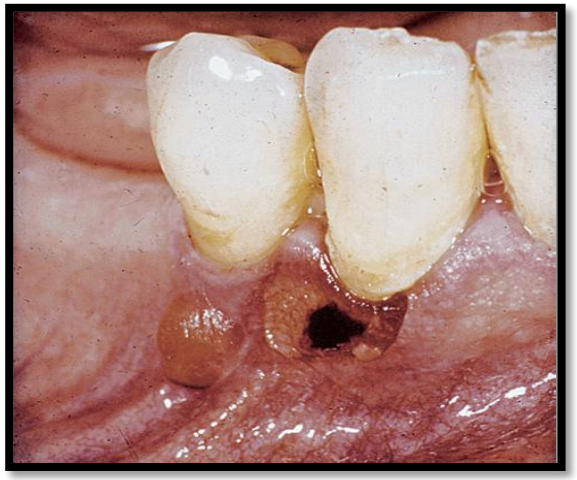
❖ *Gingival manifestations of systemic conditions*

a. Mucocutaneous disorders:

1) Lichen planus
2) Pemphigoid
3) Pemphigus vulgaris
4) Erythema multiforme
5) Lupus erythematosus
6) Drug – induced
7) Other

- These oral manifestations of disorders of the skin and mucous, membrane present as erosions, vesicles, bullae, ulcers, and desquamative lesions. The lesions may be erythematous, white, or striated in appearance.

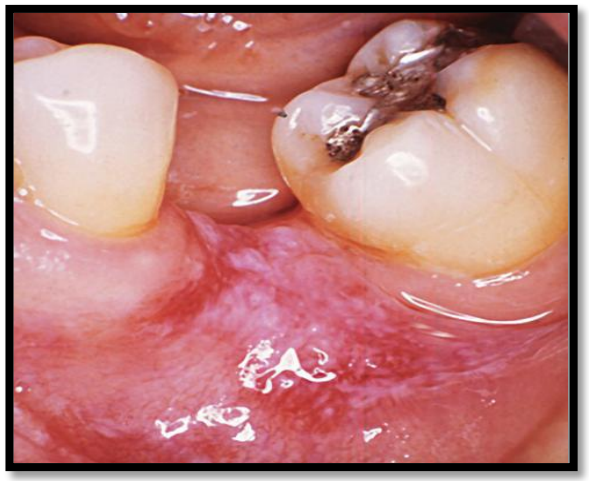
Oral lichen planus



Benign mucous membrane pemphigoid with intact and ruptured gingival bulla

Pemphigus vulgaris. Intact and ruptured gingival bullae.

Erythema multiforme with ulceration covered by heavy fibrin exudate



Gingival discoid lupus erythematosus lesion.

b . Allergic reactions

- These are gingival manifestations of immediate or delayed hypersensitivity

❑ **Dental restorative materials:**

(a) Mercury
(b) Nickel
(c) Acrylic
(d) Other.

- The allergy that is occur called **contact allergy** and there is clinical manifestations on the oral mucosa after a period of 12 - 48 hours following contact with the allergen. The lesions that affect the gingiva resemble oral lichen planus or leukoplakia. They are reddish or whitish and sometimes ulcerated but these lesions resolve after removal of the material.

❑ **Reactions attributable to:**

a) Tooth pastes / dentifrices
b) Mouth rinses / mouthwashes
c) Chewing gum additives
d) Foods additives

Contact allergy to a flavor additive in dentifrice

✓ Tooth pastes and mouth washes

- Contact hypersensitivity _ has been reported to occur after the use of toothpastes and mouth washes but it is a rare condition and the allergic reaction may be due to the flavoring additives as cinnamon which also present in the chewing gum.
- The gingiva will appear fiery red edematous and the lesion resolve after cassation of using the allergen - containing agent.

✓ Food

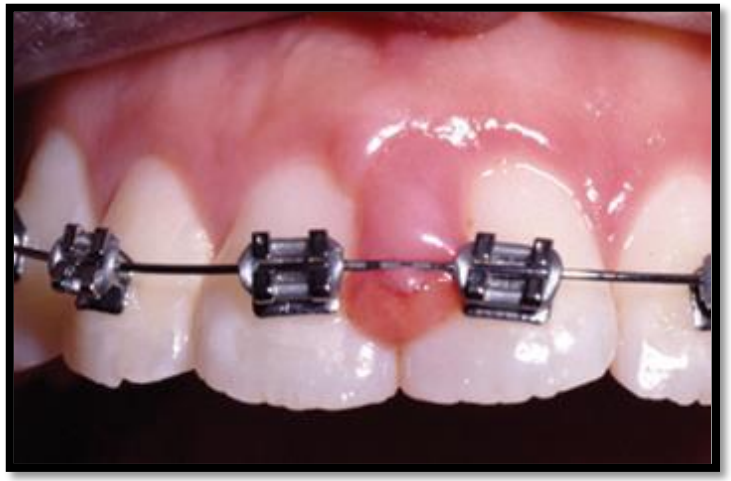
- Some patients may be hypersensitive to certain type of food as kiwi and peach, apple, peanuts and pumpkin seed, red pepper resulting in gingivitis that resolve after removal of the allergen.

❖ *Traumatic lesions*

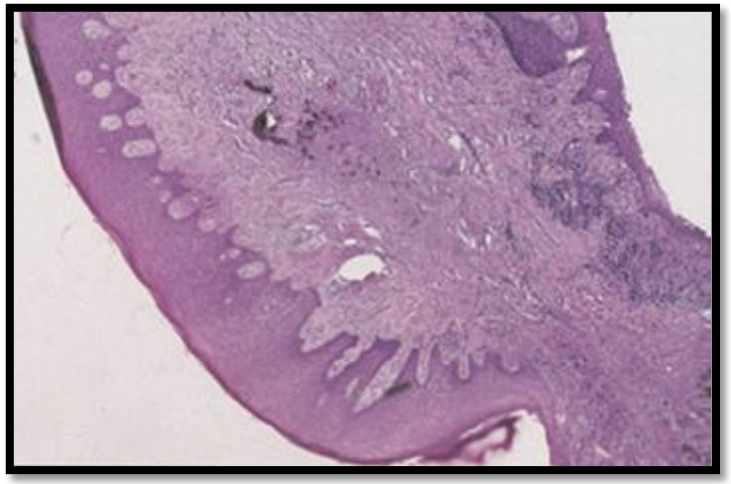
- These are self - inflicted, accidental or iatrogenic injuries. They may be present as localized gingival recession, abrasions, ulceration, and burns. The lesions may be edematous, erythematous, or white in appearance .Lesions May exhibit combinations of several of these clinical features.

a. Chemical injury
b. Physical injury
c. Thermal injury

- *Iatrogenic trauma* (i.e., induced by the dentist or health professional) to the gingiva may also lead to a gingival lesion. Such trauma may be caused directly (i.e., via use of dental instruments) or by the induction of cement or preventive or restorative materials.



- Self-inflicted *accidental damage* to the gingiva may also occur as a result of minor burns from hot foods and drinks.



❖ *Foreign-Body Reactions*

- *Foreign-body reactions lead to localized inflammatory conditions of the gingiva and are caused by the introduction of foreign material into the gingival connective tissues through breaks in the epithelium.*

- *Common examples are the introduction of amalgam into the gingiva during the placement of a restoration, the extraction of a tooth, or an endodontic apicoectomy with retrofill leaving an amalgam tattoo, abrasives may also be introduced during polishing procedures.*

❖ ***Not otherwise specified (NOS):*** *This means that there may be some forms of gingivitis that do not fit under other items discussed previous.*

Bibliography

- *Newman and Carranza's Clinical Periodontology, THIRTEENTH EDITION.*


THANK YOU
very much