CHRONIC NONSPECIFIC GINGIVITIS

It is a type of gingivitis commonly seen during the preteenage and teenage years. The chronic gingival inflammation may be localized to the anterior region, or it may be more generalized. Although the condition is rarely painful, it may persist for long periods without much improvement.

It is observed as an unusual gingivitis in individuals between 12 and 18 years of age in which the fiery red gingival lesion was not accompanied by enlarged interdental labial papillae or closely associated with local irritants.

Causes of chronic nonspecific gingivitis

The cause of chronic gingivitis is complex and is considered to be based on a multitude of local and systemic factors.

1. Hormonal imbalance: The age of the patients involved and the prevalence of the disease in girls is suggested as a possible factor.
2. Inadequate oral hygiene, which allows for food impaction and the accumulation of material alba and bacterial plaque, is undoubtedly the major cause of this chronic type of gingivitis.
3. Insufficient quantities of fruits and vegetables in the diet, leading to a subclinical vitamin deficiency, may be an important predisposing factor.
4. Malocclusion, which prevents adequate function, and crowded teeth, which make oral hygiene and plaque removal more difficult, are also important predisposing factors in gingivitis.
5. Caries lesions, with irritating sharp margins and faulty restorations with overhanging margins (both of which cause food accumulation) also favor the development of the chronic type of gingivitis.
6. A wide variety of local irritants can produce a hyperplastic type of gingivitis in children and young adults.
7. The irritation to the gingival tissue produced by mouth breathing is often responsible for the development of the chronic hyperplastic form of gingivitis, particularly in the maxillary arch.

Treatment:

1. An improved dietary intake of vitamins and the use of multiple-vitamin supplements will improve the gingival condition in many children.
2. The placement of dental restorations to restore adequate function and contour of defective teeth after the reduction of acute symptoms is an equally important treatment consideration.
3. The importance of thorough daily oral hygiene must be emphasized repeatedly to the patients.

GINGIVAL DISEASES MODIFIED BY SYSTEMIC FACTORS

GINGIVAL DISEASES ASSOCIATED WITH THE ENDOCRINE SYSTEM

Puberty gingivitis is a distinctive type of gingivitis that occasionally develops in children in the pre-pubertal and pubertal period. The gingival enlargement is marginal in distribution and, in the presence of local irritants, is characterized by prominent bulbous interproximal papillae far greater than gingival enlargements associated with local factors.

Treatment:

Treatment of puberty gingivitis should be directed toward improved oral hygiene, removal of all local irritants, restoration of carious teeth, and dietary changes necessary to ensure an adequate nutritional status. Severe cases of hyper plastic gingivitis that do not respond to local or systemic therapy should be treated by gingivoplasty.

GINGIVAL LESIONS OF GENETIC ORIGIN

Hereditary gingival fibromatosis (HGF) is characterized by a slow, progressive, benign enlargement of the gingivae. Genetic and pharmacologically induced forms of gingival enlargement are known. The gingival tissues appear normal at birth but begin to enlarge with the eruption of the primary teeth. Although mild cases are observed, the gingival tissues usually continue to enlarge with the eruption of the permanent teeth until the tissues essentially cover the clinical crowns of the teeth. The dense fibrous tissue often causes displacement of the teeth and malocclusion. The condition is not painful until the tissue enlarges to the extent that it partially covers the occlusal surface of the molars and becomes traumatized during mastication.

Surgical removal of the hyperplastic tissue achieves a more favorable oral and facial appearance. However, hyperplasia can recur within a few months after the surgical procedure and can return to the original condition within a few years.

PHENYTOIN-INDUCED GINGIVAL OVERGROWTH (PIGO)

Phenytoin (Dilantin, or diphenylhydantoin), a major anticonvulsant agent used in the treatment of epilepsy. Varying degrees of gingival hyperplasia, one of the most common side effects of phenytoin therapy.

Most investigations agree on the existence of a close relationship between oral hygiene and PIGO. PIGO can be decreased or prevented by scrupulous oral hygiene and dental prophylaxis. The relationship between plaque, local irritants, and PIGO is also supported by the observation that patients without teeth almost never develop PIGO.

- ❖ PIGO, when it does develop, begins to appear as early as 2 to 3 weeks after initiation of the phenytoin therapy and peaks at 18 to 24 months.
- ❖ Painless enlargement of the interproximal gingiva
- ❖ The buccal and anterior segments are more often affected
- ❖ As the interdental lobulations grow, clefting becomes apparent at the midline of the tooth
- ❖ In some cases, the entire occlusal surface of the teeth becomes covered.

PIGO may impose problems of

- Esthetics,
- Difficulty in mastication,
- Speech impairment,
- Delay tooth eruption, tissue trauma, and secondary inflammation leading to periodontal disease.

Dental treatment based on clinical oral signs and symptoms

- Patients with mild PIGO (i.e., less than one third of the clinical crown is covered) require daily meticulous oral hygiene and more frequent dental care.
- For patients with moderate PIGO (i.e., one third of the clinical crown is covered)
  - ✓ Meticulous oral home care
  - ✓ the judicious use of an irrigating device may be needed
  - ✓ In addition, prophylaxes and topical stannous fluoride application is recommended
  - ✓ If there has been no change, consultation with the patients physician concerning the possibility of using different anticonvulsant drug may be helpful
  - ✓ If no improvement occurs, surgical removal of the overgrowth may be recommended

- For patients with severe PIGO (i.e., more than two third of the tooth is observed) who do not respond to the previously mentioned therapeutic regiments, surgical removal is necessary.
- Gradual recurrences of the fibrous tissue usually follow the treatment.
- The success can be in controlling the gingival overgrowth with positive-pressure appliances.

Other drugs that have been reported to induce gingival overgrowth in some patients include cyclosporine, calcium channel blockers, valporic acid, and phenobarbital. As with all disorders affecting periodontal tissues, maintaining excellent oral hygiene is the primary key to successful therapy.

ASCORBIC ACID DEFICIENCY GINGIVITIS (SCORBUTIC GINGIVITIS)

Scorbutic gingivitis is associated with vitamin C deficiency and differs from the type of gingivitis related to poor oral hygiene.

- ❖ The involvement is usually limited to the marginal tissues and papillae.
- ❖ The child with scorbutic gingivitis will be evident.

Complete dental care, improved oral hygiene, and supplementation with vitamin C (the daily administration of 250 to 500 mg of ascorbic acid) and other water soluble vitamins will greatly improve the gingival condition.

PERIODONTAL DISEASES IN CHILDREN

Periodontitis, an inflammatory disease of the gingiva and deeper tissues of the periodontium, is characterized by pocket formation and destruction of the supporting alveolar bone. Bone loss in children can be detected in bite-wing radiographs by comparing the height of the alveolar bone to the cemento-enamel junction.

Distances between 2 and 3 mm can be defined as questionable bone loss and distances greater the 3 mm indicate definite bone loss.

AGGRESSIVE PERIODONTITIS (EARLY-ONSET PERIODONTITIS; EOP)

Currently called periodontitis. EOP is used as generic term to describe a heterogeneous group of periodontal disease occurring in young individuals who are otherwise healthy. EOP can be viewed as:

1) A localized form (localized juvenile periodontitis [LJP]),

2) A generalized form (generalized juvenile periodontitis [GJPI])

The prevalence of aggressive periodontitis in adolescent schoolchildren in the United States is more in African American than in whites and more in boys than in girls.

Aggressive periodontitis of the primary dentition can occur in localized form but is usually seen in the generalized form.

- ❖ LAP is localized attachment loss and alveolar bone loss only in the primary dentition in an otherwise healthy child
- ❖ The exact time of onset is unknown, but it appears to arise around or before 4 years of age, when the bone loss is usually seen on radiographs around the primary molars and/or incisors.
- ❖ Abnormal probing depth with minor gingival inflammation, rapid bone loss, and minimal to various amounts of plaque have been demonstrated at the affected sites of the child's dentition.
- ❖ Abnormalities in host defenses (e.g., leukocyte chemotaxis), extensive proximal caries facilitating plaque retention and bone loss, and a family history of periodontitis have been associated with LAP in children.
- ❖ As the disease progresses, the child's periodontium shows signs of gingival inflammation, with gingival clefts and localized ulceration of the gingival clefts and localized ulceration of the gingival margin.

GENERALIZED AGGRESSIVE PERIODONTITIS

- The onset of the GAP is during or soon after the eruption of the primary teeth.
- It results in severe gingival inflammation and generalized attachment loss, tooth mobility, and rapid alveolar bone loss with premature exfoliation of the teeth.
- The gingival tissue may initially demonstrate only minor inflammation with plaque accumulation at minimum.
- It often affects the entire dentition.
- Alveolar bone destruction proceeds rapidly, and the primary teeth may be lost by 3 years of age.
- Because of its wide distribution and rapid rate of alveolar bone destruction, the GAP was previously known as generalized juvenile

periodontitis, severe periodontitis, and rapidly progressive periodontitis.

- Chronic cases display the presence of clefting and pronounced recession with associated acute inflammation.
- Affected teeth harbor more nonmotile, facultative, anaerobic, gram-negative rods (especially *Porphyromonas gingivalis*) in GAP than in LAP. Microorganisms predominating in the gingival pockets include Aggregatibacter ctinomycetemcomitans (Aa), Porphyromonas (Bacteroides melaninogenicus, Prevotella intermedia, Capnocytophaga sputigena, and Fusobacterium nucleatum,
- The major periodontal pathogens are transmitted among family members.
- The past medical history of the child often reveals a history of recurrent infections (e.g., otitis media, skin infections, upper respiratory tract infections).
- LAP and GAP are distinctly different radiographically and clinically. Neutrophils in GAP patients have suppressed.
- Individuals with GAP exhibit marked periodontal inflammation and have heavy accumulations of plaque and calculus. Testing may reveal a high prevalence of leukocyte adherence abnormalities and an impaired host response to bacterial infections.