CHRONIC PERIODONTITIS

chronic periodontitis

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DEFINITION

• Chronic periodontitis has been defined as “an infectious disease resulting in inflammation with in supporting tissues of the teeth, progressive attachment loss and bone loss”.

chronic periodontitis
• The attempt to classify periodontal diseases was done by Flemming, Kimac, Tonetti & Mombelli in 1999. According to it chronic periodontitis was further classified in to
• *Localized periodontitis*: when less than 30% of sites assessed in the mouth demonstrate attachment and bone loss
• *Generalised*: when 30% or more of the sites in the mouth demonstrate attachment and bone loss.
ETIOLOGY OF CHRONIC PERIODONTITIS

• The current concepts on the etiology of periodontitis considers three groups of factors that determine whether a disease will occur in a subject.

• a susceptible host

• the presence of pathogenic organisms &

• the absence, or a small proportion, of beneficial bacteria.

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Susceptible host:

• Partly hereditary but can be influenced by environmental & behavioural factors. The various factors include

• genetic variations or mutations
• increased interleukin-1 production
• smoking
• stress
• systemic influences like diabetes.

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Common pathogens

- *T. forsythia*
- *P. intermedia*
- *F. nucleatum*
- *A. actinomycetocomitans*

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DIAGNOSIS

chronic periodontitis
CLINICAL FEATURES

1999 classification)

- Most prevalent in adults but can occur in children and adolescents (age-35+yrs)
- Amount of disease progression is consistent with the presence of local factors
- Subgingival calculus is a frequent finding
- Disease progression is usually slow.
- Associated with a variable microbial pattern

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• Slow to moderate rate of progression.
• Can be associated with local predisposing factors (e.g., tooth-related or iatrogenic factors)
• May be modified by and/or associated with systemic diseases (e.g., diabetes mellitus)
• Can be modified by factors other than systemic disease such as cigarette smoking and emotional stress.
Clinical features of chronic periodontitis
Other features:

- There is no racial predilection
- No familial tendency
- More severe in men
- No PMN/macrophage defects
- Normally response to therapy is good
Signs and symptoms of chronic periodontitis

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Symptoms:

• **Gingival bleeding when brushing or eating**
• **Spaces between teeth as a result of tooth movement**
• **Teeth have become loose or mobile**
• **Usually painless but occasionally, pain may be present in the absence of caries caused by exposed roots that are sensitive to cold, heat or both.**
• **Areas of localized dull pain, sometimes radiating deep into, the jaw**
• **The presence of areas of food impaction**
• **Gingival tenderness or itchiness may also be found.**
• **Halitosis**

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Signs:

- Supragingival and subgingival plaque accumulation
- Gingival inflammation which includes,
  - Spontaneous bleeding of gingiva or bleeding on probing
  - Slightly to moderately swollen gingiva.
  - Gingival colour change ranging from pale red to magenta
- Loss of gingival stippling
- Changes in the surface topography which include blunted or rolled gingival margins & flattened or cratered papilla

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• **gingival recession** resulting from loss of attachment & alveolar bone.
• **Pocket formation**
• **Loss of periodontal attachment**
• **Loss of alveolar bone**
• **Root furcation exposure.**
• **Tooth mobility in advanced cases of bone destruction**

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Disease severity

- Mild periodontitis - Periodontal destruction is generally considered slight when no more than 2mm of CAL has occurred.
Moderate periodontitis:
Periodontal destruction is generally considered moderate when 3 to 4mm of CAL has occurred.
SEVERE PERIODONTITIS:
Periodontal destruction is considered severe when 5mm or more of CAL has occurred.
Radiological appearance of chronic periodontal disease

Figure 36-14 Radiographic changes in periodontitis.

A, Normal appearance of interdental septa. B, Fuzziness and a break in the continuity of the lamina dura at the crest of the bone distal to the central incisor (left). There are wedge-shaped radiolucent areas at the crests of the other interdental septa. C, Radiolucent projections from the crest into the interdental septum indicate extension of destructive processes. D, Severe bone loss.
Pattern of bone loss:

- may be *vertical*,
- *Horizontal*,
- *Vertical bone loss is usually associated with angular bony defects and intra bony pocket formation.*
- *Horizontal bone loss is usually associated with supra bony pockets.*

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Correlation of clinical and histopathological features of chronic periodontitis

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<tr>
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<th>Clinical features</th>
<th>Histopathologic features</th>
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<tr>
<td>1</td>
<td>Gingival wall of pocket presents various degrees of bluish red discolouration; flaccidity; a smooth, shiny surface; and pitting on pressure.</td>
<td>The discolouration is caused by circulatory stagnation, the flaccidity by destruction of gingival fibers and surrounding tissues; the smooth, shiny surface, by atrophy of epithelium and oedema; and the pitting on pressure, by edema and degeneration</td>
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<td>2</td>
<td>Less frequently, gingival wall may be pink and firm</td>
<td>In such cases, fibrotic changes predominate over exudation and degeneration</td>
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<td>Bleeding is elicited by gently probing soft tissue wall of pocket</td>
<td>Ease of bleeding results from increased vascularity, thinning and degeneration of epithelium, and proximity of engorged vessels to inner surface.</td>
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<td>4</td>
<td>When explored with a probe, inner aspect of pocket is generally painful</td>
<td>Pain on tactile stimulation is caused by ulceration of inner aspect of pocket wall</td>
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<td>5</td>
<td>In many cases, pus may be expressed by applying digital pressure.</td>
<td>Pus occurs in pockets with suppurative inflammation of inner wall.</td>
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Risk factors for chronic periodontitis

The risk factors for chronic periodontitis include

• Behavioural risk factors
• Systemic risk factors.
BEHAVIOURAL RISK FACTORS

• **Tobacco Use And Smoking:** A direct relationship exists between smoking and tobacco use. Smoking has a negative response to periodontal therapy. GEORGE K etal (JOP VOL 44 :2007 178-194);JOP 71:184’2000

• **Patient Compliance**

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SYSTEMIC RISK FACTORS:

- Diabetes
- HIV
- Psychological Factors
- Age
- Microbiological Factors
- Familial & Genetic Factors

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Smoking and periodontal disease

- ↑prevalence and severity of destruction
- ↑PPD, attachment loss
- ↑rate of periodontal destruction
- ↑prevalence of severe periodontitis (Tonneti, Ann periodontology 3:88, 1988)
- ↑tooth loss (Holm G; JOP 71:1846, 2000)

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SMOKING AND CHRONIC PERIODONTITIS.

• ↑prevalence with increased number of cigarettes smoked per day (J periodontology NHANES III, 71:743, 2000)

• ↓prevalence and severity with smoking cessation.

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DIABETES AND CHRONIC PERIODONTITIS

• Studies have shown that diabetic patients with periodontal infection have a greater risk of worsening glycemic control over time compared to diabetic subjects without periodontitis (perio 2000, vol 44, 2007).
Stress and chronic periodontitis increases the risk for periodontitis, by increased cortisol level and thus affecting the pathogenesis of periodontitis.
DIFFERENTIAL DIAGNOSIS

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PROGNOSIS:

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PROGNOSIS

- (slight to moderate periodontitis), the prognosis is usually good provided, the inflammation can be controlled through good oral hygiene and the removal of local plaque retentive factors.
- In patients with more severe disease, as evidenced by furcation involvements and increasing mobility, or in patients who are noncompliant with oral hygiene practices, the prognosis may be downgraded from fair to poor.
TREATMENT

- Improvement In Oral Hygiene
- Scaling And Root Planning
- Sometimes Curettage
- Host modulation and chemotherapy
- Occlusal evaluation and therapy
- Pulpal treatment in cases of perio-endo lesions
- Surgical therapy.
- Pocket therapy
- Resective osseous surgery
- Reconstructive periodontal surgery
- Furcation treatment

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