Noncarious Dental Lesions, Dental Occlusal Trauma, and Dental Hypersensitivity

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Noncarious Dental Lesions

- Attrition
- Abrasion
- Erosion
- Enamel Hypoplasia
- Dental Fracture
Attrition

- Wearing away of a tooth as a result of tooth-to-tooth contact
- Gradual flattening of occlusal plane
- Smooth, shallow, hard, shiny.
- May be found: occlusal, incisal, and proximal surfaces
Etiological Factors of Attrition

- **Bruxism**: may be psychologic, tension.

  - **Usage**: wear of surfaces: coarse food.
Abrasion

- Mechanical wearing away of tooth substance by forces other than mastication
- At exposed root surfaces and at incisal edge
Etiological Factors of Abrasion

- Abrasive agent applied with vigorous horizontal toothbrushing

- Pipe held between teeth, opening bobby pins may leave a small notch in incisal edge
Erosion

- Loss of tooth substance by a chemical process
- Facial or lingual surfaces
Etiological Factors of Erosion

- Chronic vomiting: pregnancy or eating disorder

- Extrinsic: industrial: workers’ teeth can be exposed to atmospheric acids. Lemons or other citrus fruit sucked frequently
Enamel Hypoplasia

- A defect which occurs as a result of disturbance in the formation of the organic enamel matrix

- **Types:**
  - Hereditary: enamel is partly or wholly missing
  - Systemic (environmental): e.g. nutritional deficiency, fluorosis
Fractures of Teeth

• Trauma to the face could cause and involve fractured bones and teeth in addition to soft tissue injuries

 Causes:
• Falls
• Automobile, bicycle and diving accidents
• Contact sports when mouth protectors are not worn

 Line of fracture:
• Horizontal
• Diagonal
• Vertical
Dental Occlusal Trauma
Periodontal Occlusal Trauma

Developed when occlusal forces exceed the adaptive capacity of the supporting periodontal tissues.
Symptoms are associated with occlusal trauma:

1. Increasing mobility of the teeth

2. Visible movement of a tooth when subjected to occlusal forces

3. Migration of teeth

4. Sensitivity
Etiology of Periodontal Occlusal Trauma

- Situation that increase the frequency of occlusal forces: e.g. clenching and bruxism
Etiology of Periodontal Occlusal Trauma

- Circumstances that reduce the resistance of the periodontium to occlusal forces: loss of alveolar bone and periodontal ligament support
Dental Bruxism

- Normal Teeth
- Bruxism or Tooth Grinding

Custom-Made Nightguard
Trauma From Occlusion

- **Primary**: excessive occlusal force on a tooth with normal bone support. “E.g.: the effect of a new restoration placed above the line of occlusion”

- **Secondary**: excessive occlusal force on a tooth with bone loss and inadequate alveolar bone support (the ability of the tooth to withstand the occlusal force is impaired)
Dental Hypersensitivity

Normal

Sensitive

Crown

Exposed Dentin

Dentin

Pulp

Root

Receding Gum (inflamed, bleeding)

Enamel

Nerve

Cementum
Hypersensitivity

- Occurs when dentin is exposed
Factors contributing to Hypersensitivity

- Loss of gingiva
- Loss of cementum
- Loss of enamel
Types of Pain Stimuli

- **Tactile (mechanical):** e.g. toothbrush bristles

- **Chemical:** e.g. acid present in many foods and beverages

- **Thermal changes in temperature can cause pain reaction:** e.g. by hot or cold foods and beverages, air entering oral cavity.
Dental Hygiene Care for Hypersensitivity

1. Self – care by the patient: bacterial plaque control, dentifrice, self applied fluoride

2. Professional application: preparation for desensitization, the most commonly used agents are: fluoride, metallic salt (occludes the dentinal tubules), varnishes (bonding adhesives and resins: to create physical blocks to external stimuli)