



**Pulp and periapical pathosis in
consequence of caries
Symptoms, diagnosis, pathology**

**Zsuzsanna Tóth D.D.S., Ph.D.
Semmelweis University
Dept. of Conservative Dentistry**

Symptoms of caries

- Sensitivity to sweet, cold/hot, chewing...
 - Remains of food interproximal
 - Gingival papilla bleeding
 - Unpleasant taste
 - Bad breath
 - Damaged esthetics
-

Caries diagnosis

- **Inspection, palpation, percussion**
 - **Vitality test**
 - **Fibre-optic transillumination**
 - **Radiographic examination**
 - **Electric resistance measurement**
 - **Laser fluorescence**
 - **QLFTM-technology (Quantitative Light-induced Fluorescence)**
 - **CLSM- technology (Confocal Laser Scanning Microscopy)**
-

Classification of pulpal diseases

- Reversible pulpitis
 - Irreversible pulpitis
 - Hyperplastic pulpitis
 - Pulpal necrosis
-

Symptoms of pulpal diseases

■ Reversible pulpitis

- sharp, transient pain after application of stimuli

■ Irreversible pulpitis

- asymptomatic, mild symptoms or
- intermittent or continuous episodes of spontaneous pain:
 - sharp or dull
 - localized or diffuse
 - last only minutes or for hours
- difficult pain localization
- prolonged response to stimuli

■ Pulpal necrosis

- asymptomatic, or episodes of spontaneous pain
- sensitive to percussion (yes / no)

Reversible pulpitis

Clinical Features:

- hypersensitive to thermal (hot or cold) or sweet stimulus which rapidly disappears when stimulus is removed
 - localized increase in intrapulpal pressure
 - threshold stimulation for A-delta nerve fibers is lowered
-

Irreversible pulpitis

Clinical Features:

- hypersensitive to thermal stimulus (hot or cold) which produces a pain which lingers for minutes when stimulus is removed
 - pain is severe, persistent and poorly localized
 - pain may radiate to ear, temple, eye or neck
-

Hyperplastic pulpitis

- no gender or racial predilection
 - children and young adults
 - exuberant proliferation of chronically inflamed pulpal tissue through a large open carious lesion
 - asymptomatic
 - primary dentition and the permanent dentition
 - gross caries destruction with possible premature tooth loss
-

Pulpal necrosis

Clinical Features:

- discolored tooth
 - teeth do not respond to either cold or electric pulp tests
 - may range from being asymptomatic to being very sensitive to percussion
-

Hard tissue changes due to pulpal inflammation

- **Pulp calcification**

- **Pulp stones**
- **Diffuse calcification**
- **Calcific metamorphosis**

- **Internal resorption**

Periapical pathosis

- Acute apical periodontitis
 - Chronic apical periodontitis
 - Condensing osteitis
 - Acute apical abscess
 - Suppurative apical periodontitis
(Chronic apical abscess)
 - Nonendodontic periapical pathosis
-

Symptoms of periapical pathosis

Acute apical periodontitis

- spontaneous slight / severe / excruciating discomfort or pain
 - no response to electrical or thermal stimuli
 - application of pressure causes marked to excruciating pain
 - radiographic feature: thickening of periodontal ligament space
-

Symptoms of periapical pathosis

Chronic apical periodontitis

- asymptomatic or slight discomfort
 - no response to electrical or thermal stimuli
 - percussion causes little or no pain
 - slight palpation sensitivity
 - radiographic feature range to extensive destruction of periapical tissue
-

Symptoms of periapical pathosis

Condensing osteitis

- asymptomatic or discomfort or pain
 - yes or no respond to electrical or thermal stimuli
 - yes or no sensitivity to palpation or percussion
 - radiographically diffuse, concentric radiopacity of periapical tissue
-

Symptoms of periapical pathosis

Acute apical abscess

- moderate to severe discomfort and / or swelling
 - systemic manifestations of an infective process (high temperature, malaise, leukocytosis)
 - no response to electrical or thermal stimuli
 - painful to palpation or percussion
 - radiographic feature: frank periapical lesion (infrequent: thickening of periodontal ligament space)
-

Symptoms of periapical pathosis

Suppurative apical periodontitis or Chronic apical abscess

- sinus tract
 - asymptomatic because of drainage
 - closure of the sinus: pain
 - radiographic feature range to extensive destruction of periapical tissue
-



THANK YOU FOR YOUR ATTENTION!

