

Introduction to endodontic diagnosis



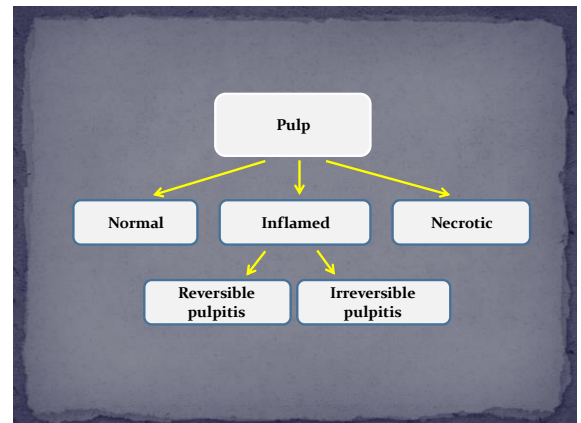
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Normal pulp:

- Asymptomatic
- Responds normally to pulp tests:
 - Mild transient sensation
 - Does not cause distress to the patient
 - Sensation reversed immediately following stimulus removal
- Radiographically:
 - Normal apical anatomy:
 - ✓ Intact lamina dura
 - ✓ 0.2- 0.3 mm PDL space
 - No evidence of resorption or pulp exposure



Irreversible pulpitis:

An established state of pulpal inflammation from which the pulp cannot recover.

Pain:

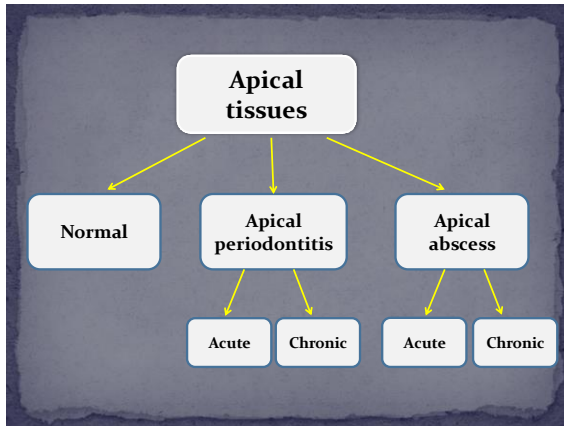
- Usually intermittent and spontaneous
- Usually dull and poorly localized
- Aggravated upon exposure to temperature changes (esp. cold).
- Lasts for a prolonged period following stimulus removal

Deep caries, defective deep restoration, pulp exposure or any insult to the pulp.

No or minimal radiographic changes

Reversible pulpitis:

- The pulp is inflamed and symptomatic due to certain irritants.
- Pulp stimulation is uncomfortable to the patient but symptoms subside quickly.
- Caries, defective restoration, exposed dentine, recent dental treatment
- Radiographically:
 - Normal lamina dura
 - No evidence of resorption or pulp exposure
- Must be differentiated from dentinal hypersensitivity.
- The symptoms are relieved and inflammation is reversed once the irritation source is removed.



Pulp necrosis:

The ultimate outcome of pulpitis.

May also occur after trauma that can deprive the pulp from its blood supply.

If bacteria gain access to a necrotic pulp, a lack of blood supply means that no inflammatory and immune cells are present to fight against infection. Also bacteria are capable of degrading organic necrotic tissue for use as a substrate.

Tooth is typically asymptomatic (before the pathosis extends into the periodontium)

Tooth non-responsive to electric or cold pulp tests. However, applying heat may cause pain due to remnants of pulpal fluids or gases.

Radiographic changes range from thickening of the apical PDL space to the development of peri-apical radiolucent lesion.

Chronic apical periodontitis:

- A long standing inflammatory reaction characterized by the presence of granulation tissue known histologically as a periapical granuloma.
- Generally presents with no symptoms. Though the tooth may feel "different" to the patient upon percussion.
- Negative response to pulp tests.
- Radiographically: an apical radiolucency that reflects a state of equilibrium between the host defensive response and the infectious process.



Acute apical periodontitis (AAP):

Tooth painful to biting pressure or percussion

May or may not respond to pulp testing.

May be caused by:

- Extension of pulpal inflammation
- Reaction to intra-pulpal infection
- Trauma

Radiographically:

Widened PDL space but no peri-apical radiolucent lesion.

Chronic apical abscess (chronic suppurative periodontitis)

- A draining sinus tract is the hallmark of chronic apical abscess.
- Usually not associated with pain due to the relief provided by the draining sinus
- Can be drained either intra or extra-orally.
- Radiographically, a radiolucent periradicular area is evident.
- Can be traced by inserting a gutta percha point in the sinus tract and exposing a radiograph, the offending root, can be identified readily.



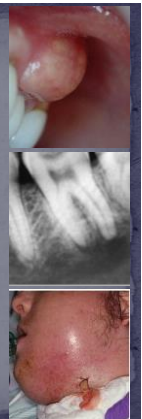
Acute apical abscess:

An extremely painful condition characterized by:

- Intense pain and tenderness to biting, pressure, percussion or palpation
- Intra-oral or extra-oral swelling
- Varying degrees of mobility
- Possibly systemic signs of fever, malaise and lymphadenopathy.

The culprit tooth has an infected pulpal space. Therefore negative response to pulp tests.

Radiographic changes may range from a widened apical PDL space to a periapical radiolucency.



Patient's chief complaint:

Pain is the most common complaint

Ask specific, but not leading, questions about their pain such as:

Location

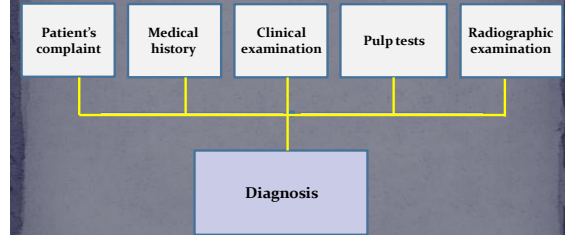
Character

Onset

Duration

Aggravating and relieving factors

Frequency and timing



Clinical examination:

Intra-oral examination:

Soft tissues

Teeth charting

Occlusal analysis

Quadrant/ tooth in question:

- Palpation
- Percussion
- Probing depths
- Mobility
- Restorability

Clinical examination:

Extra-oral examination:

Facial symmetry

Swellings

Redness

Lymph nodes

Sinus tracts

TMJ

MOM

Radiographic examination:

Peri-apical radiographs



Pulp tests:

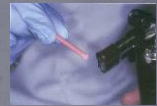
Cold, heat or electric pulp test.

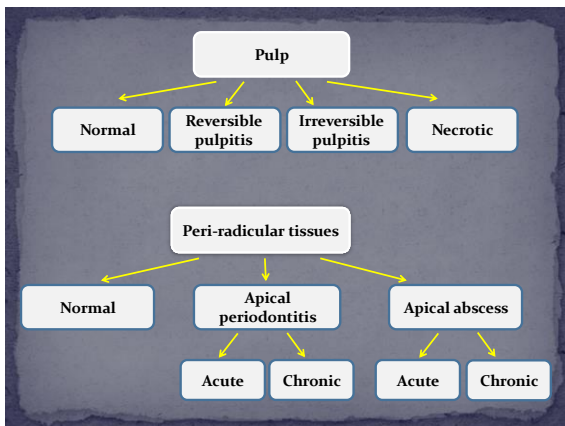
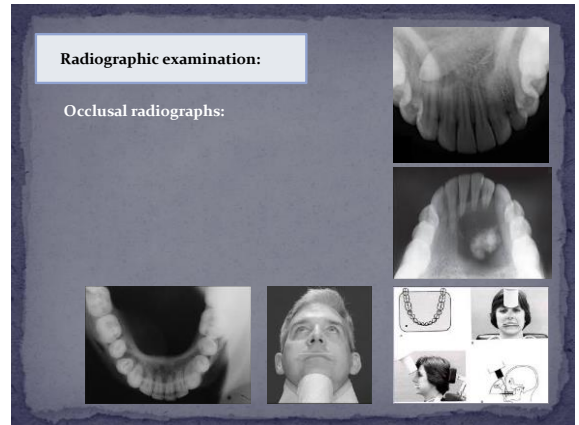
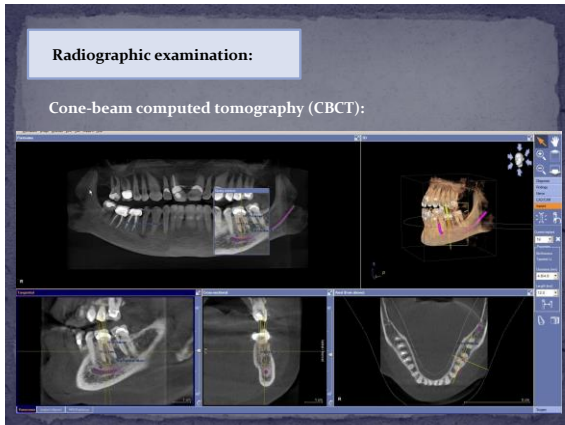
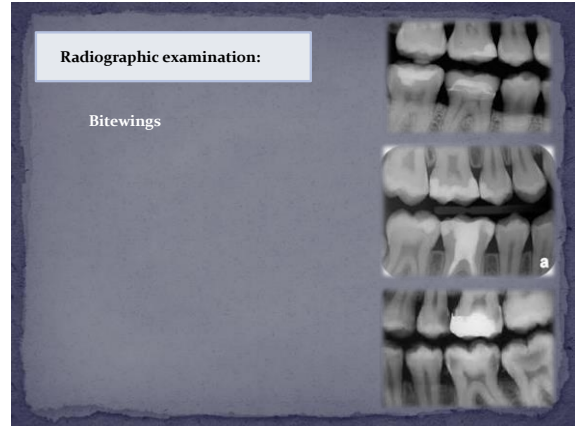
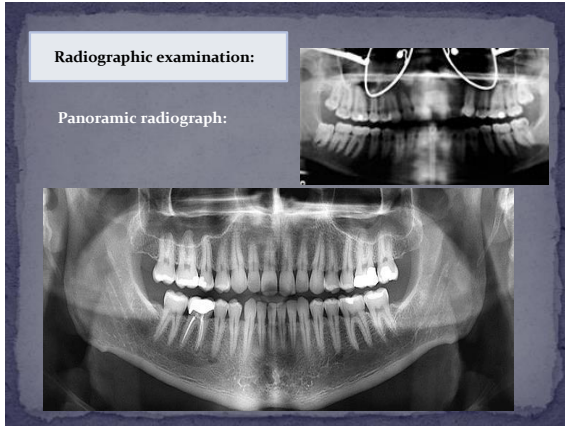
Carried out in order to:

- Assess pulp vitality
- Reproduce patient's symptoms
- Relieve patient's symptoms
- Baseline record

Patient's possible response:

- No response
- Normal response
- Pain:
 - > Quick, sharp and subsides immediately following stimulus removal
 - > Delayed lingering pain





Diagnosis:

The sum of all the information gathered from the patient's history, clinical and radiographic examination and pulp tests to determine what problem the patient is having and why he/she is having that problem

The diagnosis should include that of the pulp and the apical tissues

Thank you

