Endodontic Treatment Planning and Patient Education

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Art of Communication

- Listening

Doctor – Patient Position

Eye Contact

Body Language

Informed Consent

A. *Benefits*

B. *Risks*

C. *Alternatives*

D. *Consequences of doing nothing*

Patient Communication

Key element to successful dentistry

Doctor is a “teacher” to the patient

The Four Cs

- Control
- Communication
- Concern
- Confidence

5 Stages of Diagnosis

1. The patient tells the clinician why the patient is seeking advice
2. The clinician questions the patient about the symptoms and history that led to the visit
3. The clinician performs objective clinical tests
4. The clinician correlates the objective findings with the subjective details and creates a tentative differential diagnosis
5. The clinician formulates a definitive diagnosis

Pathways of the Pulp, 10th Ed., 2010

Diagnosis

- Chief Complaint
- Medical History
- Dental History
- Objective Examination
- Radiographic Examination
- Additional Diagnostic Procedure

Chief Complaint

- Patients will express their complaint in their own words
- "I have cold sensitivity on my right side (patient points to upper right side)"
- History of Present complaint
  - Pain
  - Swelling
  - Broken tooth
  - Bad taste
  - Tooth discoloration

Medical History

- **No pertinent medical history**

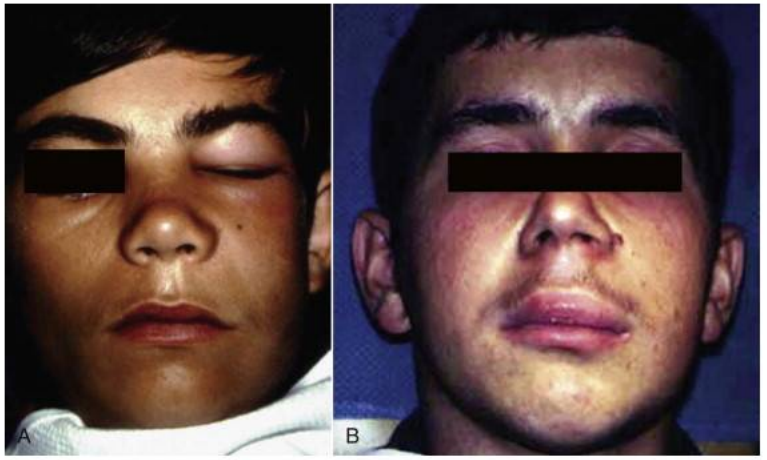
Dental History

- **Location**
  "Can you point to the offending tooth?"
- **Commencement**
  "When did the symptoms first occur?"
- **Intensity**
  "How intense is the pain?"
- **Provocation and Relief of Pain**
  "What produces or reduces the symptoms?"
- **Duration**
  "Do the symptoms subside shortly, or do they linger after they are provoked?"

Pathways of the Pulp, 10th Ed., 2010

Objective Examination

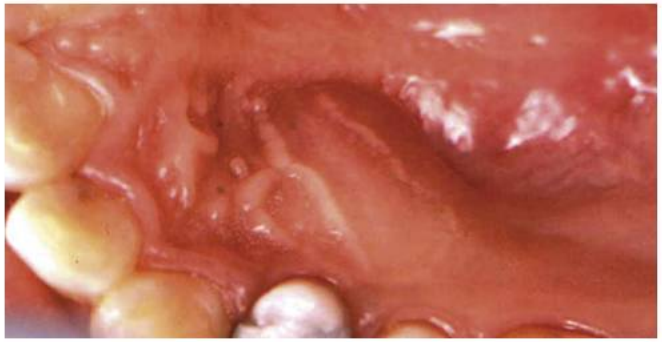
- **Extra-oral Examination**
- **Facial symmetry**
- **Facial palpation**

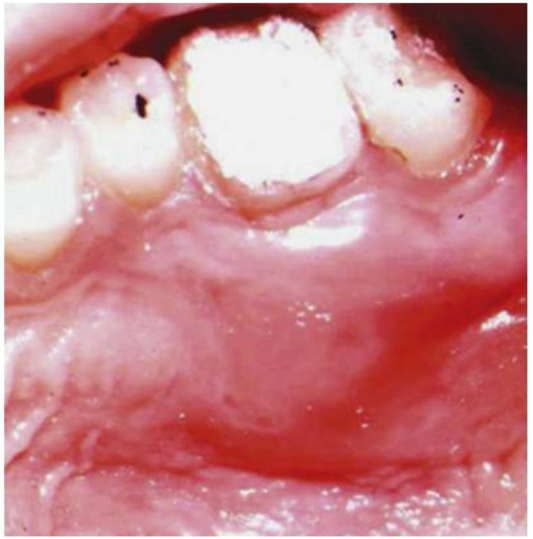


Pathways of the Pulp, 10th Ed., 2010

Intra-oral Examination

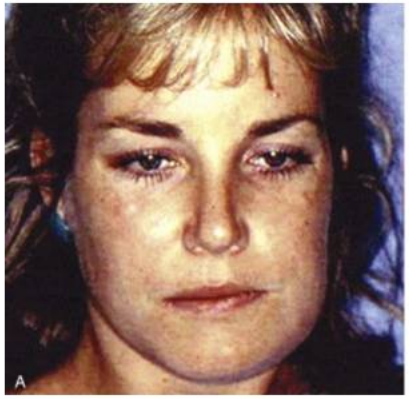
- **Soft tissue**
- **Dentition**

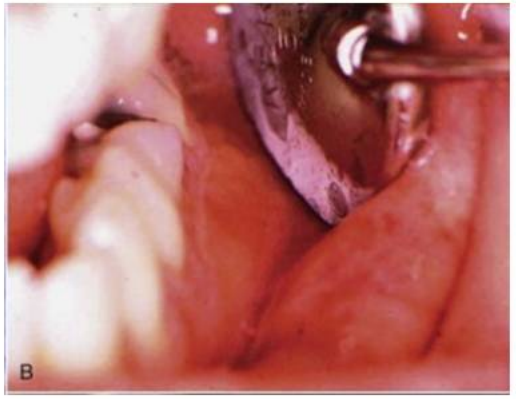




Pathways of the Pulp, 10th Ed., 2010

Extra- and Intra-oral Swelling

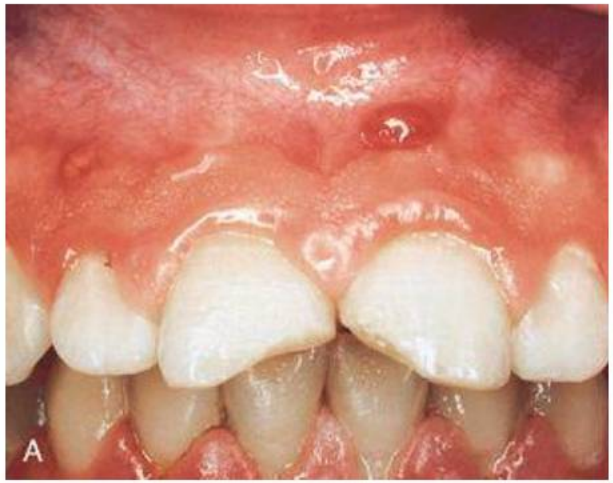




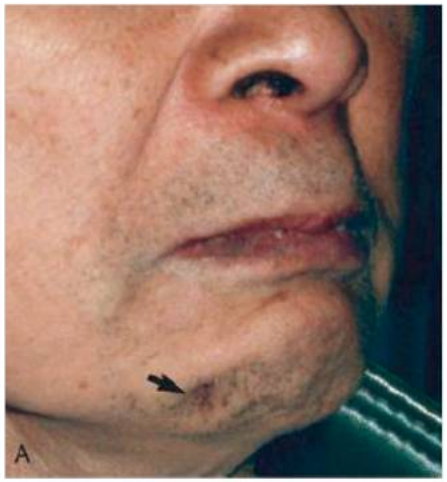
Pathways of the Pulp, 10th Ed., 2010

Intra-oral Examination

- Sinus Tract



Intra-oral sinus tract



Extra-oral sinus tract

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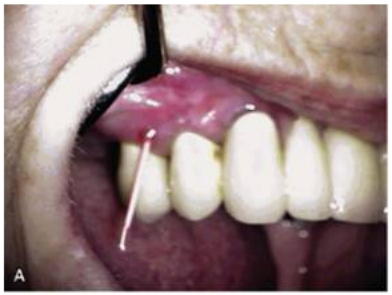
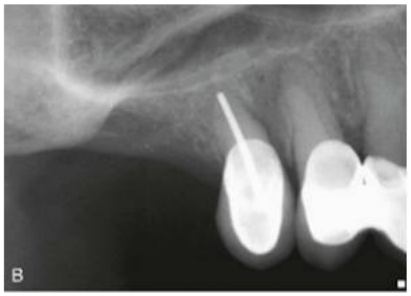
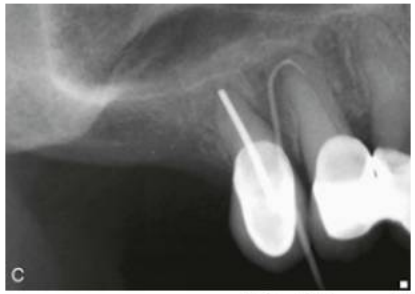
Intra-oral Examination

- **Sinus Tract**







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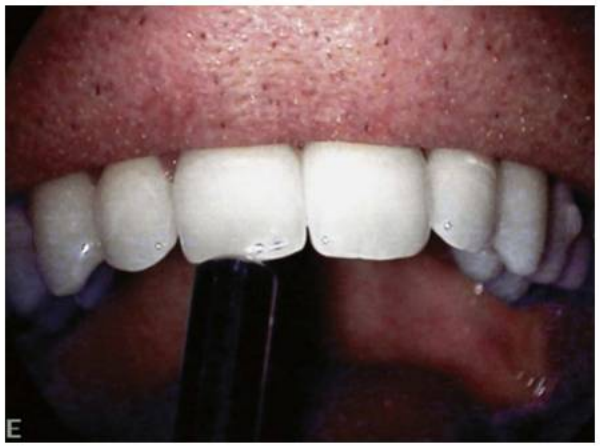
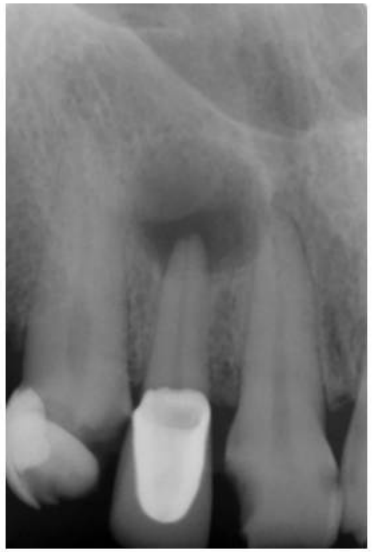
Percussion

Represents inflammation of the periapical tissues

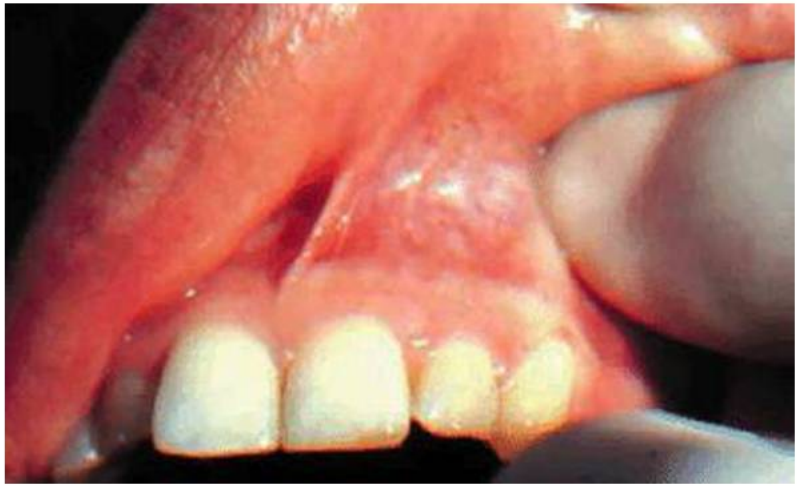




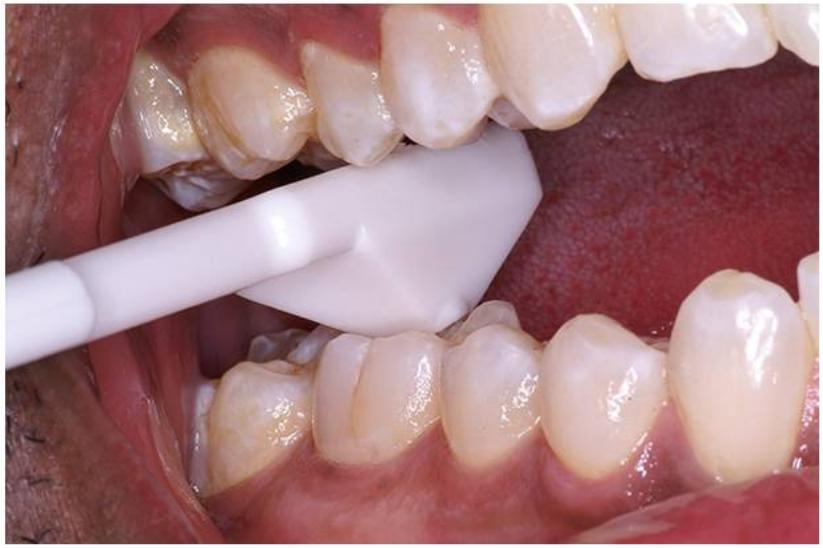
Pathways of the Pulp, 10th Ed., 2010

Palpation

Represents inflammation of the periapical tissues

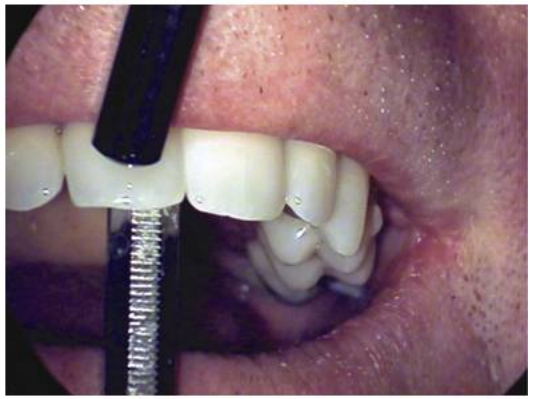


Bite Test



Mobility

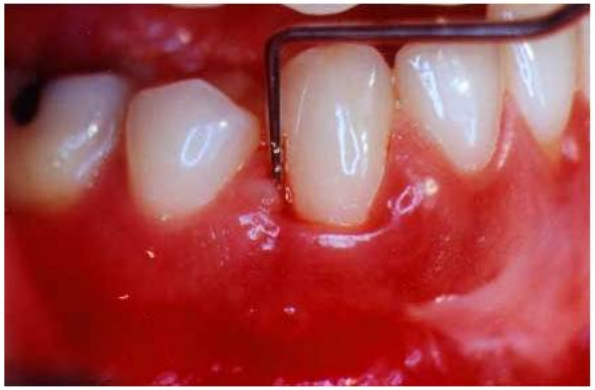
- Miller Tooth Mobility Index (Miller S C: Textbook of periodontia. Blakiston Company, Philadelphia, 1938) +
- classification will be used:
- 1 = any discernable horizontal mobility up to 1 mm (total movement)
- 2 = greater than 1 mm of horizontal movement (total movement)
- 3 = vertical mobility; tooth is depressible



Pathways of the Pulp, 10th Ed., 2010

Periodontal Status

- Narrow deep probing in a virgin tooth indicates either a crown-to-root fracture or a draining sinus tract



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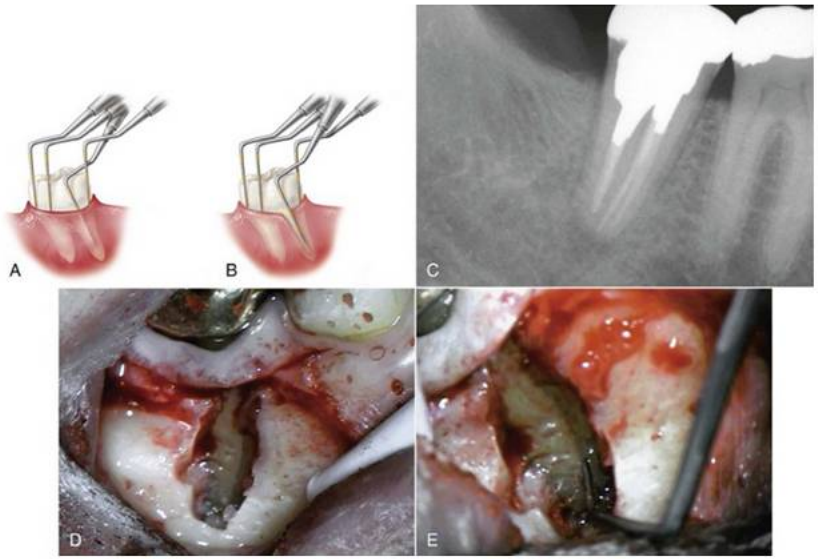
Periodontal Status

- **Narrow deep probing in a RCT tooth indicates a vertical root fracture (most likely non-restorable)**



Pathways of the Pulp, 10th Ed., 2010

Differentiation Periodontal and Pulpal Lesions

- Sign and Symptom of Periodontitis
- Teeth with Chronic Periodontitis are commonly Free of Symptoms
- The Pocket May Be Tender to Probing and Deposit May be Present
- BOP with Suppuration with Deeper Pocket
- Significant Discomfort Is Not Elicited by Percussion or Thermal Stimulus

Differentiation Periodontal and Pulpal Lesions

- **The Sign and Symptom of Pulpal Disease**
  - Pulpal sensation Initiated by the Stimulation of Dentin is Fast, sharp and Severe and is Mediated by Myelinated A-Delta Fibers
  - Sensation from Core of The Pulp is Intiated by Unmyelinated C Fiber and is Dull, Slow and Diffuse
  - Thermal Stimulus and Percussion applied to IP teeth can Provoke Intense, Bright, Throbbing and Severe Pain

Differentiation Periodontal and Pulpal Abcesses

- **Periodontal Abscesses**
  - Usually not severely painful
  - Occur in pocket or sulcus at the level of CT attachment, so there is little elevation of periosteum to cause significant pain
  - Any stimulus to the site may be painful
  - Formation of Sinus tract less common

Differentiation Between Periodontal and Pulpal Abcesses

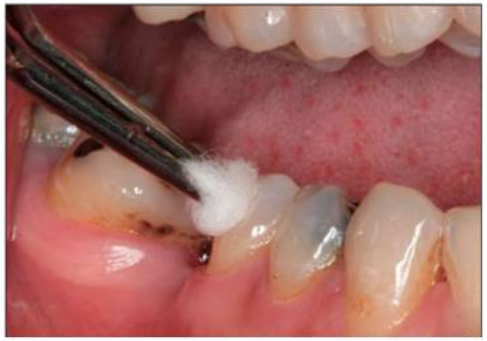
- **Acute Apical Abcess**
  - Commonly communicate directly with the external soft tissue surface by a sinus tract through the oral mucosa or gingiva
  - Before completion of sinus tract , the patient experience severe pain because of involvement of PDL and elevation of periosteum
  - Perforation of the plate accompanied by swelling, pus and collection under periosteum
  - Sinus tract is narrow and constricted

Pulpal Tests

- **Thermal**
  - Cold

Endo Ice

Large cotton pellet



Place pellet on incisal edge or buccal surface of cusp

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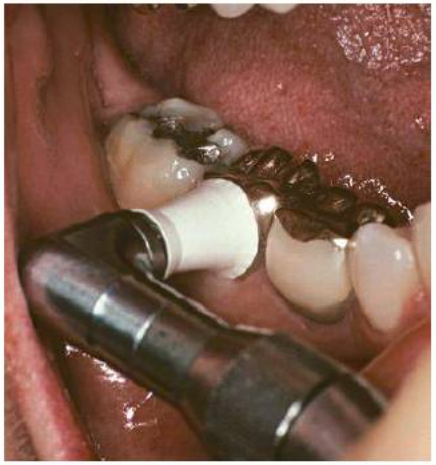
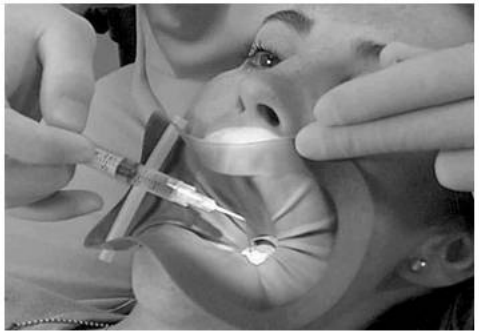
Pulpal Tests

- **Thermal**
  - Heat



Prophy Cup



Rubberdam Isolation and test with hot coffee

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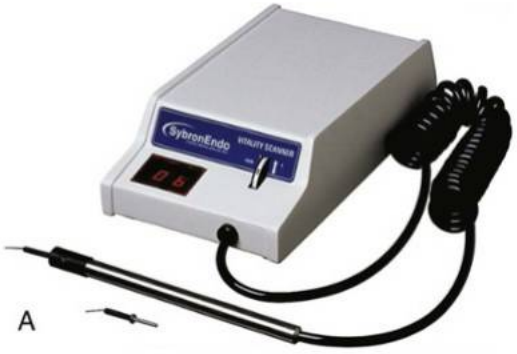
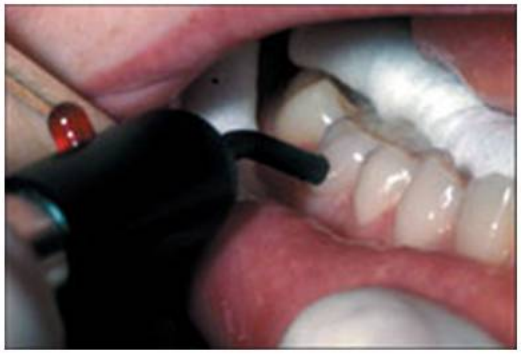
Pulpal Tests

- **Electric**





Dry surface to be tested
Place toothpaste over the probe tip

Pathways of the Pulp, 10th Ed., 2010

Pulp Testing on Crowns

- **Cold will transmit through crowns**
- **EPT will not generate current through crowns**

Miller SO., et al 2004
Fulling H-J. & Andreasen JO., 1976a

Radiographic Examination

- Aids in assessing periapical tissues
- Condition of the pulp (calcifications)
- Condition of tooth or coronal restoration (primary decay, recurrent decay, leaky crowns)
- Evaluation of existing root canal treatment
- Identify any periapical pathology

Pulpal Diagnosis

Normal Pulp

- Responds to cold, but no pain
- Responds to EPT
- Normal response to percussion/palaption

Pulpal Diagnosis

Reversible Pulpitis

- Exaggerated response to cold, but pain **does not linger**
- Responds to EPT
- Sensitive to Sweets
- Normal response to percussion/palpation

Pulpal Diagnosis

Symptomatic Irreversible Pulpitis

- **Pain to cold that lingers**
- **May or may not have pain to heat**
- **Spontaneous intermittent pain**
- **Constant pain**
- **Percussion/palpation may be positive**

Pulpal Diagnosis

Asymptomatic Irreversible Pulpitis

- Exaggerated response to cold, but pain **does not linger**
- Initial Pulpal Diagnosis: Reversible Pulpitis
- Pulp exposure after caries excavation changes pulpal diagnosis to Asymptomatic Irreversible Pulpitis

Pulpal Diagnosis

Necrotic Pulp

- No cold response
- No heat response
- No response to EPT
- Percussion/palpation maybe positive

Pulpal Diagnosis

Previously Treated

- Root canal therapy performed
- No cold response
- No heat response
- No response to EPT
- Percussion/palpation usually positive

Pulpal Diagnosis

Previously Initiated

- Pulpotomy, pulpectomy performed
- Thermal and Electric tests will vary depending on the procedure performed
- Percussion/palpation maybe positive

Periradicular Diagnosis

- **Based on:**
  - **Presence of symptoms**
  - **Presence of periapical lesion**

Periradicular Diagnosis

Normal

- No periapical lesion
- Percussion/palpation normal

Periradicular Diagnosis

Symptomatic Apical Periodontitis

- Periapical lesion may or may not be present
- Percussion/palpation is positive

Periradicular Diagnosis

Asymptomatic Apical Periodontitis

- Periapical lesion is **present**
- Percussion/palpation is **negative**

Periradicular Diagnosis

Acute Apical Abcess

- Periapical lesion usually present
- Percussion/palpation is usually positive
- **Intra- and/or extra-oral swelling**

Periradicular Diagnosis

Chronic Apical Abscess

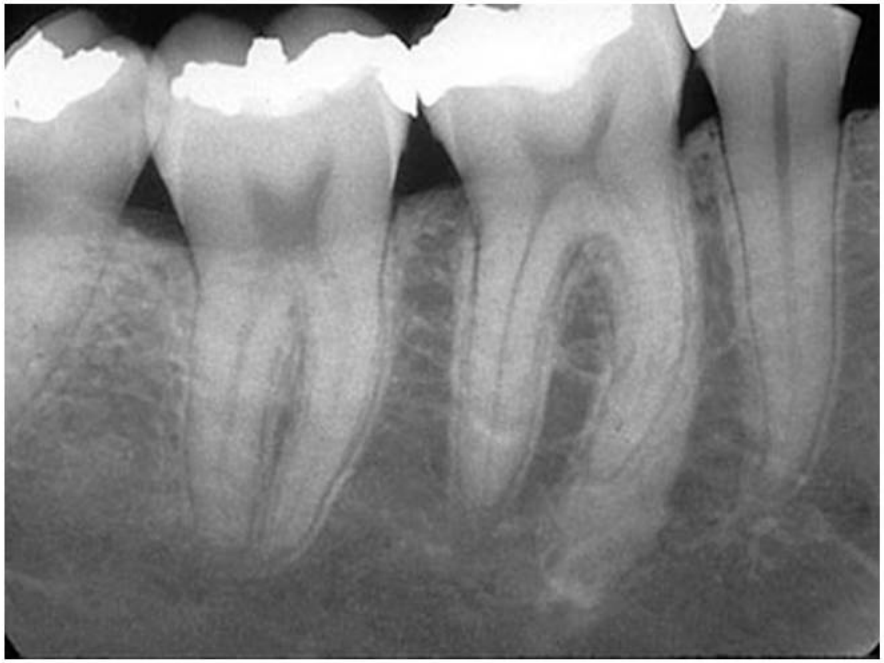
- Periapical lesion usually present
- Percussion/palpation may or may not be positive
- **Presence of a sinus tract**

Periradicular Diagnosis

Condensing Osteitis

- **Radio-opaque** periapical lesion
- Percussion/palpation may or may not be positive

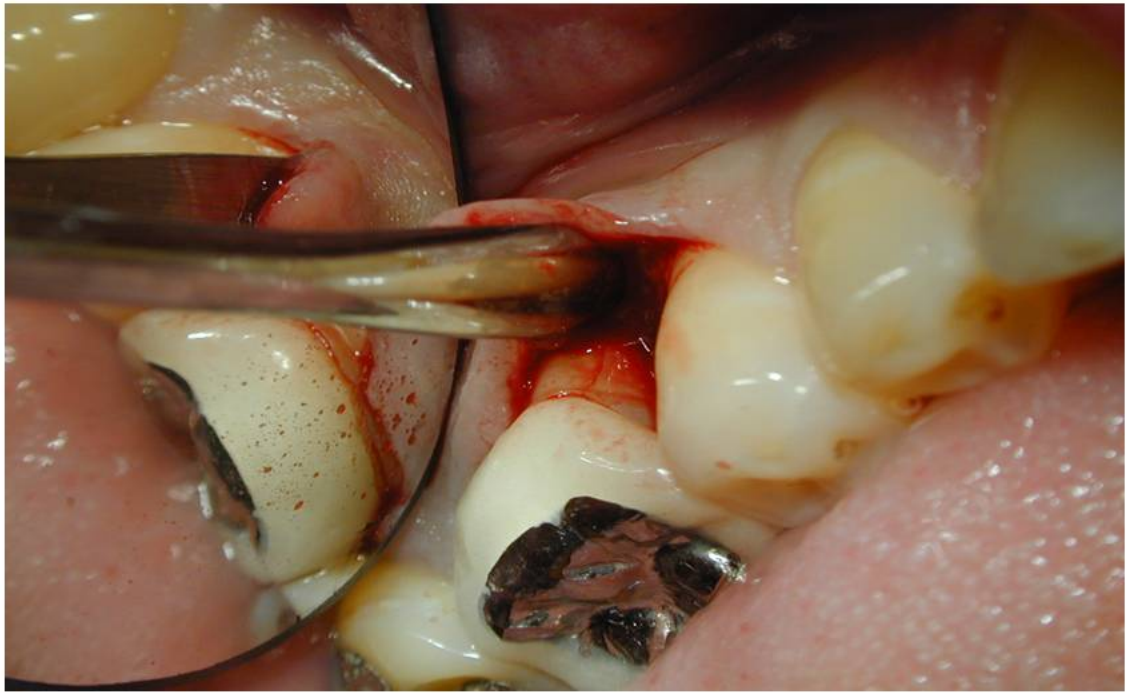
Condensing Osteitis



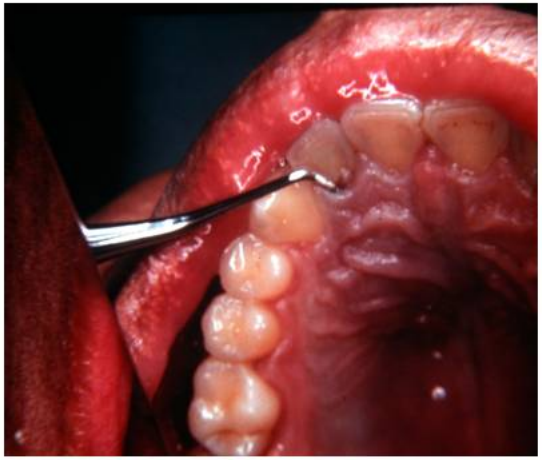
Differential Diagnosis

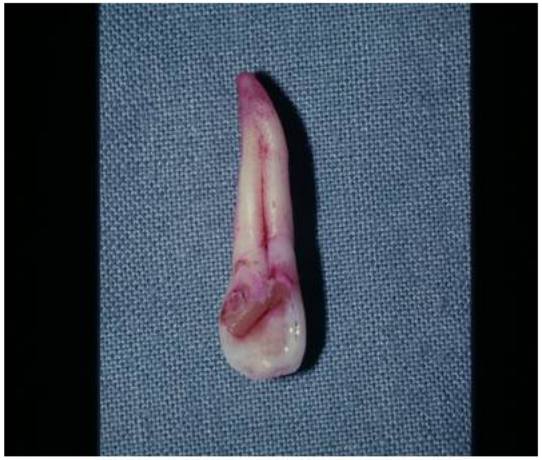
- Crack/Vertical fracture
- Developmental malformation
- Resorption
- Perforation

Crack/Vertical fracture

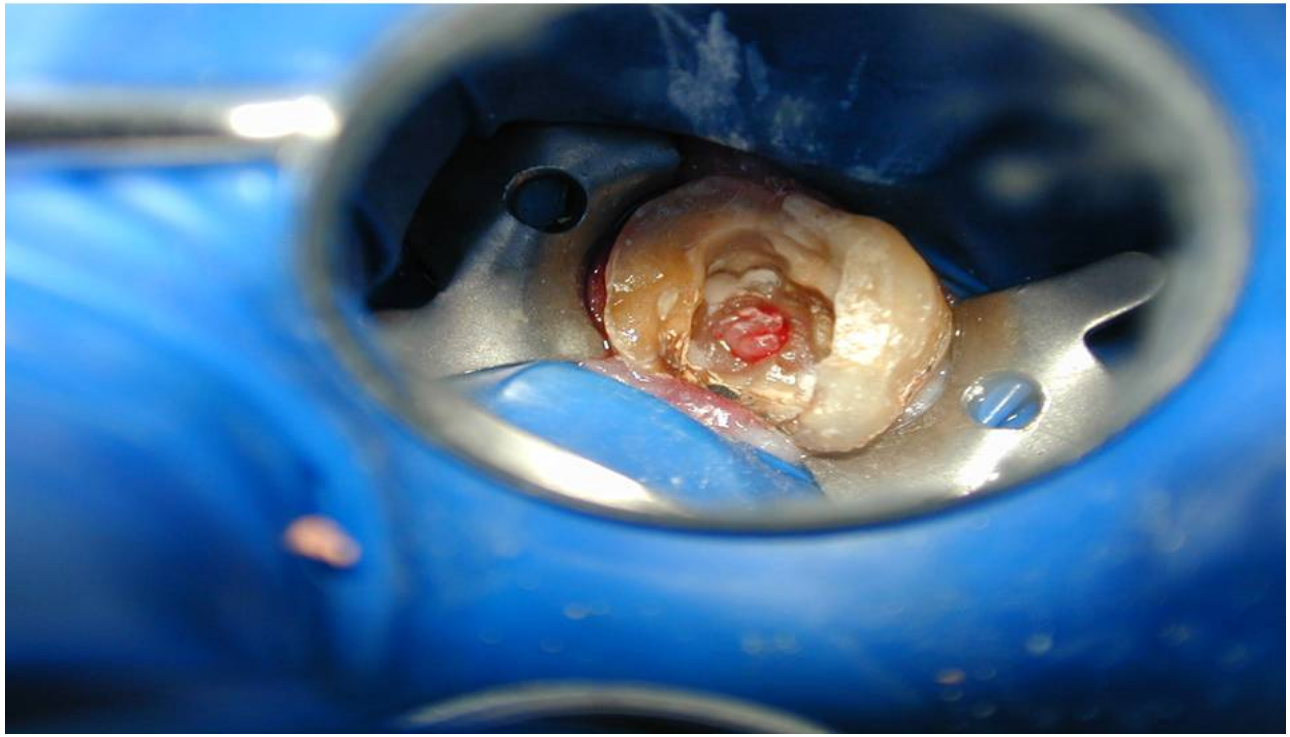


Developmental Malformation

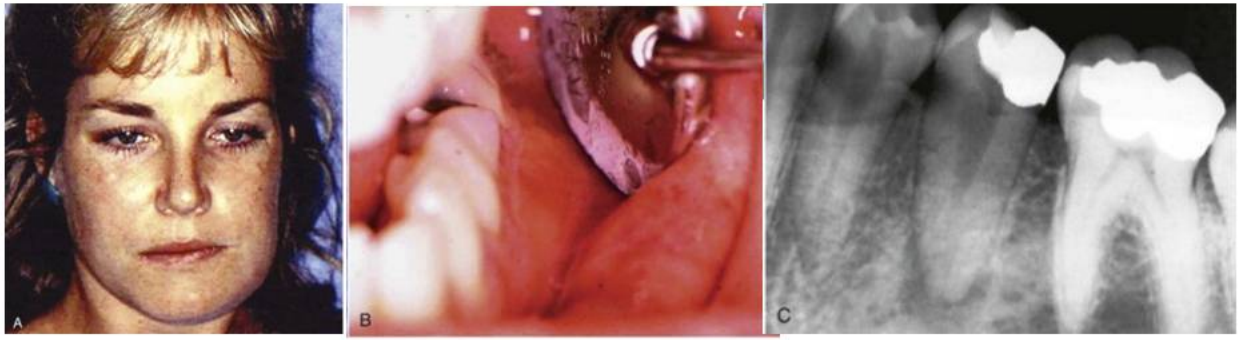




Perforatrion



Case 1



No response to thermal/electric test

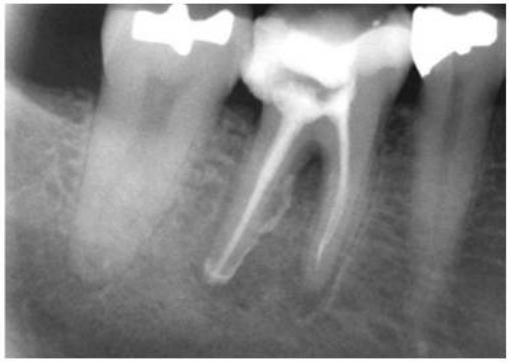
Percussion/palpation (-)

Diagnosis

Pulpal:

Periradicular:

Case 2



No response to thermal/electric test

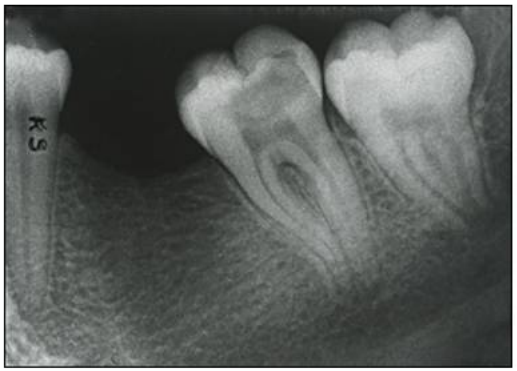
Percussion/palpation (-)

Diagnosis

Pulpal:

Periradicular:

Case 3



Cold: Exaggerated/hypersensitive but not lingering (++)

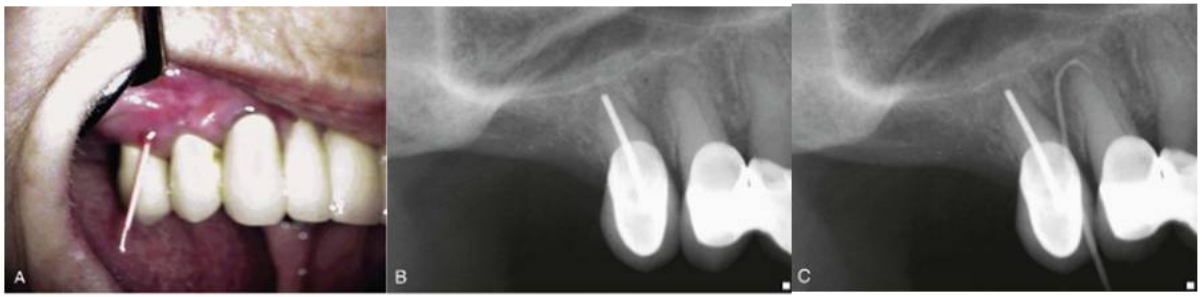
Percussion (++); Palpation (-)

Diagnosis

Pulpal:

Periradicular:

Case 4



No response to thermal/electric test

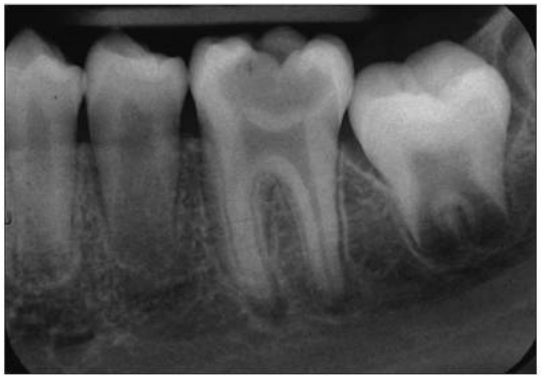
Percussion negative; palpation positive

Diagnosis

Pulpal:

Periradicular:

Case 5



Cold: Exaggerated/hypersensitive but not lingering (++)

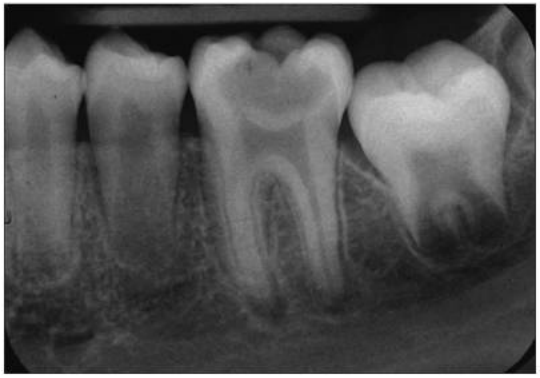
Percussion (-); Palpation (-)

Diagnosis

Pulpal:

Periradicular:

Case 5



Caries excavation lead to pulp exposure

Final Diagnosis

Pulpal:

Periradicular:

Thank You